

# FLIGHT

The  
AIRCRAFT  
ENGINEER  
&  
AIRSHIPS

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Founder and Editor : STANLEY SPOONER

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## Flight

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## EDITORIAL COMMENT.



### The R.A.F. Display

HERE are those who consider that, regarded purely as a "show," this year's R.A.F. Display at Hendon perhaps fell a little short of previous years' Pageants. Certainly the earlier events of the day seemed a little "tame" at times, but against that must be set such extraordinary performances as that of the "Avro-Lynx" chasing around the aerodrome on one wheel and/or a wing-tip, the like of which, we venture to say, has never the world over been seen at any Pageant, Display, or flying meeting before. Again, the almost startling realism of machines "shot down in flames" was such as would have more than made up for a number of "dull" events, granting that any such were incorporated in the programme. It is all mainly a matter of view point. For instance, there was nothing very spectacular in the dropping of food and medicine by parachute to the white population that had "evacuated" the village, but to those who took the trouble to go a little below the surface, that little item was, in many ways, one of the most convincing of the whole Display. Personally, we do not think that there was anything to complain of in this year's Display, and the general standard of flying was such as to make one rejoice in the superb qualities of our R.A.F. If we may be permitted to offer one suggestion, and it is given in no carping spirit, it is that in future Displays it would be a great advantage if a little more distinction could be made between the various machines. What we mean is this: In such of the events as included manoeuvres of "enemy" as well as our own aircraft, it was sometimes a little difficult to follow the entire sequence of events, owing to the similarity of "enemy" and home-defence machines. Would it not be possible in the future to give "enemy" machines different markings? For instance, instead of the circles, some other mark might be used (one would, of course, have to be careful not to copy the existing markings of any nation). Or, again, all "enemy" machines might be doped

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### DIARY OF FORTHCOMING EVENTS

Club Secretaries and others desirous of announcing the dates of important fixtures are invited to send particulars for inclusion in this list:—

1927

- July 15 .... Entries Close for King's Cup Air Race.
- July 16 .... Birmingham Air Pageant, and Air League Challenge Cup, Castle Bromwich.
- July 30 ... King's Cup Air Race.
- Aug. 10-12 Navy v. R.A.F. Cricket Match.
- Aug. 20—
- Sept. 2 .... International Aero Exhibition, Copenhagen.
- Sept. 10 .... Gordon-Bennett Balloon Race. Denver, U.S.A.
- Sept. 25 .... Schneider Trophy Race at Venice.
- Oct. 20 .... Aero Golfing Soc. (Cotton Cup), Walton Heath.

with pigments of different colours from those used on British aircraft. The expense entailed should not be very great, and certainly it would be easier to follow the progress of events.

One feature of this year's Display which we regarded as extremely gratifying was that to all intents and purposes, with one exception, war-time types had disappeared from the programme. The only exception was the good old D.H.9A, and somehow one cannot get the feeling that this machine is altogether a "back number." Rather would we put it this way: Although by this time all machines of the R.A.F. ought to be post-war types, the retention of the D.H.9A does not give one a feeling of incongruity. But even this type must go, and the "Fox" was doubtless chosen with a view to proving, to those inclined to "make do" with war-time types, why it must go. There was no denying the superior speed of the modern type, and so we shall probably soon have seen for the last time a type of machine that has served so long and faithfully.

♦ ♦ ♦  
**"Oceanitis"** The poor old Atlantic must be feeling pretty blue by now. Within the last few weeks it has been flown three times, although on the last occasion it very nearly got its revenge. And somehow there seems to be some significance in the fact that Commander Byrd, when let down by his compass and his wireless, threatened by storm, rain and fog, chose to alight in the sea, rather than risk a landing in the dark. Although he was flying an aeroplane, he chose the sea. How much more natural that would have been had he been flying a seaplane. Moreover, in that case the machine might, probably would, have been safe. So that we arrive at the conclusion that the seaplane is the logical type. That is a view which FLIGHT has been preaching for many years, and so far from modern events having proved us wrong, we think we can justly claim that everything points to our opinion being correct.

That the Atlantic can be crossed by aeroplane has now been amply demonstrated, and from that point of view there is little object in continuing spasmodic trans-Atlantic attempts. In the case of Commander Byrd's flight, however, it was rather different in that, not only was the machine used a standard commercial type, a three-engined one at that, but four people were carried in addition to the fuel. Assuming for the moment that a crew of two was sufficient, the flight may be claimed to have proved that it is technically possible to carry two passengers across the Atlantic from New York to Paris. That the cost of

carrying two passengers was somewhat prohibitive is rather beside the point for the present. If a commercial service is ever to be established, it will almost certainly not be a direct non-stop one. By alighting at Newfoundland and in Ireland, the amount of fuel carried could be very materially reduced, with consequent increase in paying load. But the machine to be used will undoubtedly be a seaplane.

The flight over the Pacific, from San Francisco to Honolulu, also made in a Fokker monoplane, may be regarded as the beginning of the conquest of the Pacific, and thus the American aviators, Maitland and Hegenberger, are entitled to every credit for their performance, which, although not a record as regards duration or actual distance, was a record for trans-oceanic non-stop flying. Both flights are valuable demonstrations of engine reliability, but the next step towards practical trans-oceanic flying must be by seaplane.

#### By Seaplane

As strong supporters of the seaplane, we are naturally keenly concerned in the proposed flight of Captain Frank T. Courtney from England to New York and back. As a flight this is likely to be of more practical value than non-stop dashes across in aeroplanes, even if less spectacular. We hope, and we believe, that Courtney and his companions will succeed, and in succeeding they will have done much towards ensuring due recognition of the seaplane type of machine. But as we said a couple of weeks ago, we cannot but regret that Courtney should have chosen a foreign machine for his flight. We know that there are British seaplanes capable of making the flight, but making that claim is a very different matter from proving it. If Courtney succeeds—and, as we have said, we do not doubt that he will—he will only have succeeded in proving that a seaplane is capable of the crossing. He will still not have demonstrated that a British seaplane can do it. How such a flight as that planned can help British aviation we fail to see. On the contrary, is it not natural to expect that the world in general will believe that Courtney "had to get the best machine, and got it from abroad"? What were the reasons for Courtney's failure to get a British machine we do not know. It may be taken for granted that he would not have chosen a foreign machine had a British been available. And if Courtney had set his heart on making the flight, it is difficult to blame him for taking what was available. But that does not make the necessity for using a foreign machine any less regrettable.

## THE KING'S CUP

THE Royal Aero Club has now received the approval of His Majesty the King to the course for the air race for the King's Cup, to be held on July 30, 1927, at Hucknall, Nottingham.

The total distance of the race is approximately 540 miles, and consists of three courses of approximately 180 miles each.

The first course, which will be flown twice, passes over the counties of Leicestershire, Rutlandshire, Huntingdonshire, Cambridgeshire, Norfolk and Lincolnshire; and turning points will be at Spittlegate, Huntingdon, King's Lynn, and Cranwell.

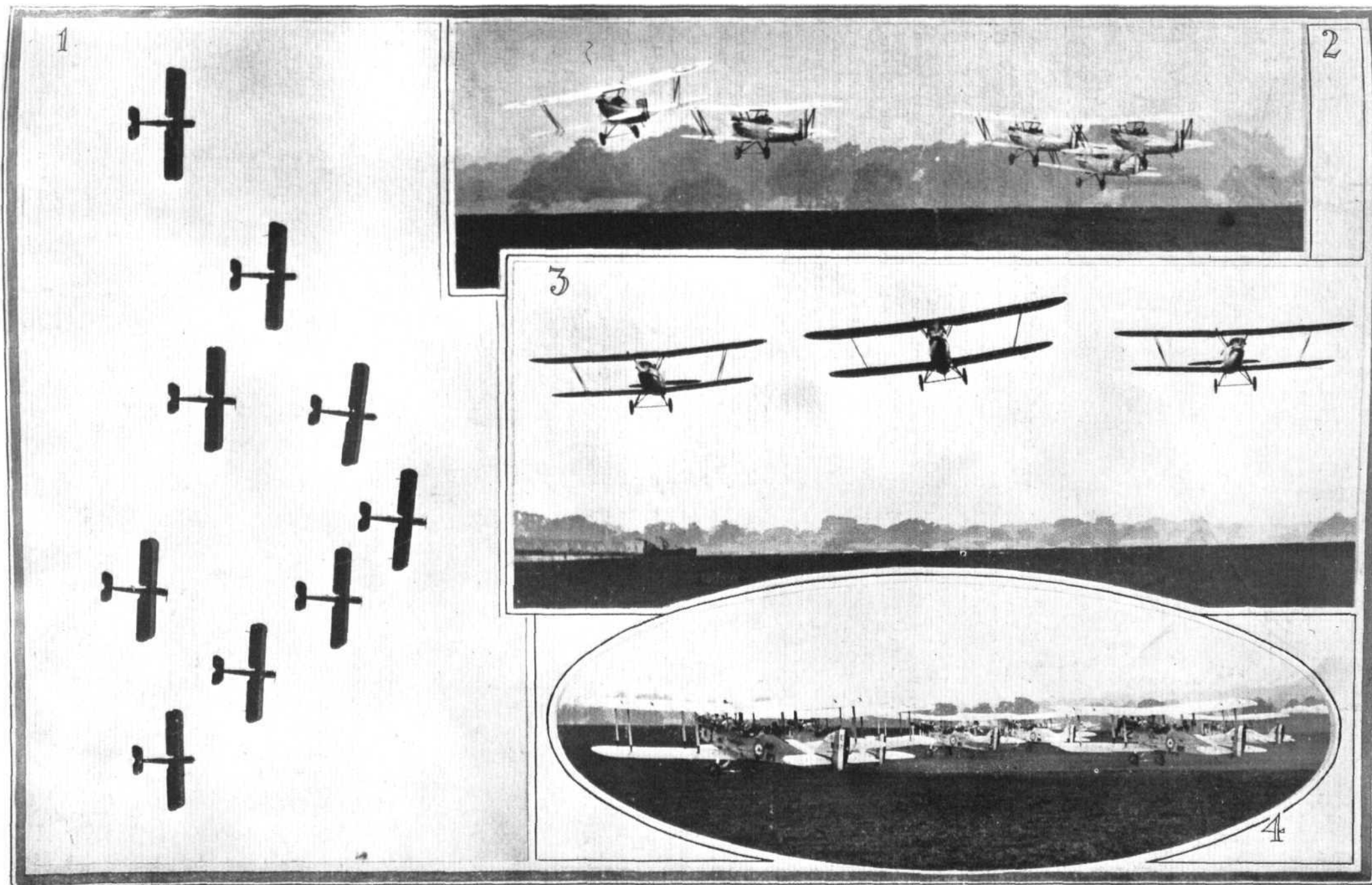
The second course passes over Nottinghamshire, Yorkshire and Lincolnshire, with turning-points at Howden (Yorks) and Skegness.

The start and finish of each course is at Hucknall, Nottingham, and competitors will alight at the aerodrome there on completing each course and make a compulsory stop of 30 minutes.

The meeting at Hucknall, Nottingham, will extend over the August Bank Holiday week-end.

On Monday, August 1, the programme will consist of exhibition flying and short races over a course of 10 miles. These races will include the Grosvenor Challenge Cup for light aeroplanes, and a special race between the light aeroplane clubs for the challenge trophy presented by the Society of British Aircraft Constructors. The prizes for these events will amount to about £600.

The closing date for entries for the King's Cup Race is July 15.



[" FLIGHT " Photographs

THE R.A.F. DISPLAY : Event No. 1. Air Drill by Day-bombing Squadrons. This was staged to show the improvement in performance of modern machines. 1, shows a formation of D.H.9A's. In 2, a squadron of Fairey "Foxes" are seen taking off, while 3, shows a flight of these machines approaching the enclosures in formation. 4, shows some of the D.H.9A's taking off in formation.



ALTHOUGH at each of the previous R.A.F. Displays it seemed that it would be impossible to improve on the programme for the next year's display, yet when it came along there was some outstanding feature that made it "better than ever." This year's display—the eighth—which took place at Hendon on Saturday, July 2, was by no means an exception, in fact, we came away after the "show" feeling more impressed by everything we had seen than we had ever been before.

While, to a certain extent, following on the same successful lines of previous programmes—with the introduction of several new features—there was a *something* about each event that made it stand out. Everywhere the advance made on the technical side was apparent, not only as regards the performance of the machines, but in the skill of their pilots.

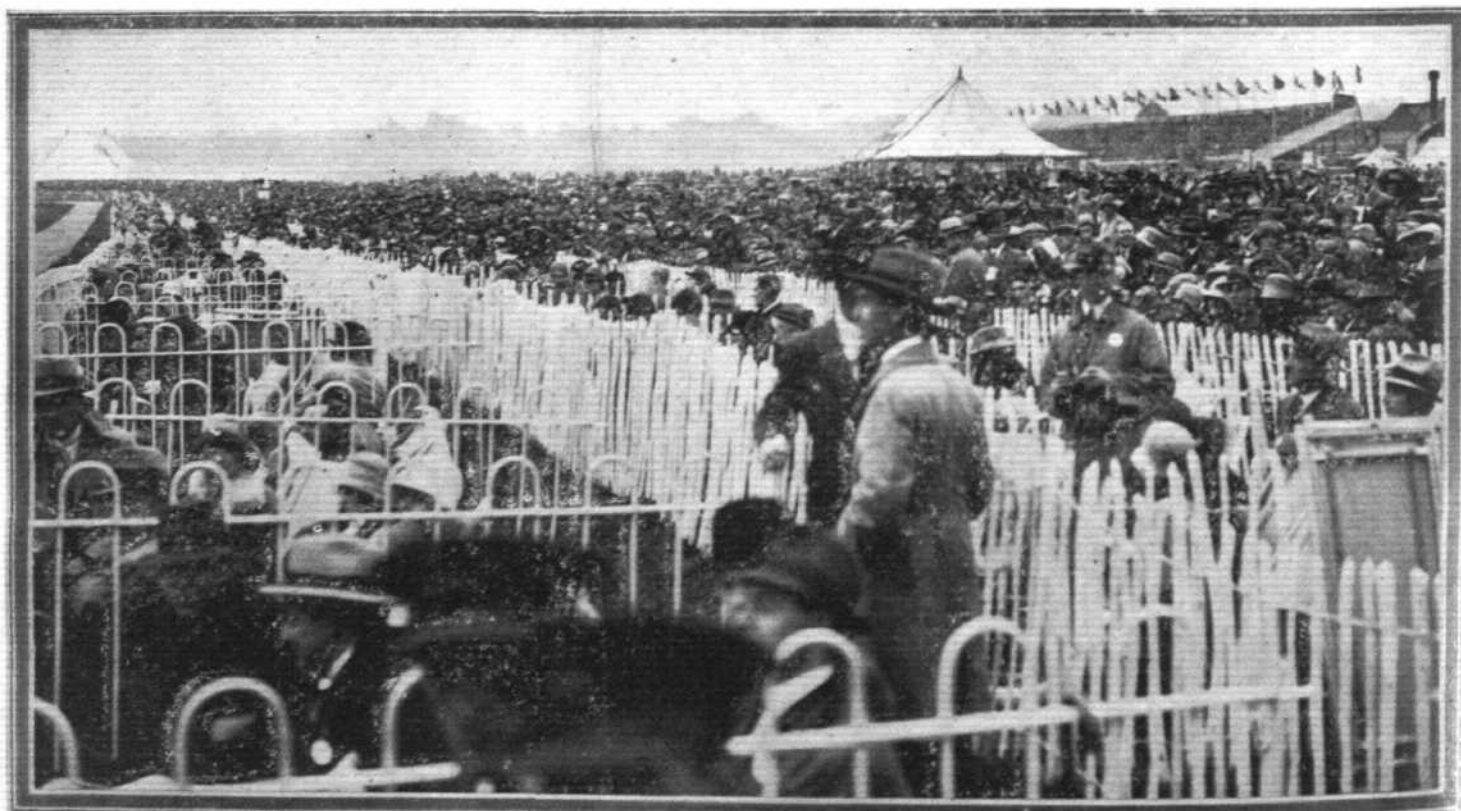
Then there was the organisation and the arrangements. This side of the Display has always been good, but this time it was excellent. One item in particular was the operation of the Marconiphone loud-speakers in the various enclosures, which not only provided, for all, the good music of the Central Band of the R.A.F., but kept everyone informed regarding the various events and items of interest.

Their Majesties the King and Queen, the King of Spain, the Ex-King and Queen of Greece, the Duke of York, and the Duke of Connaught were present, the King and Queen being received by Sir Samuel Hoare and Lady Maud Hoare, Marshal of the Royal Air Force Sir Hugh Trenchard and Lady Trenchard, Sir Philip Sassoon, Air Marshal Sir John Salmond, and Air Vice Marshal Sir Philip Game. There

was also present a large gathering of distinguished personages. An enthusiastic spectator amongst the foreign visitors was Gen. Balbo, Italian Under-Secretary of State for Air, now in this country. We can say, without fear of contradiction, that as a social gathering the R.A.F. display has now become second to none. Ascot and four-wheeled cabs must certainly be bracketed as shades of the Past!

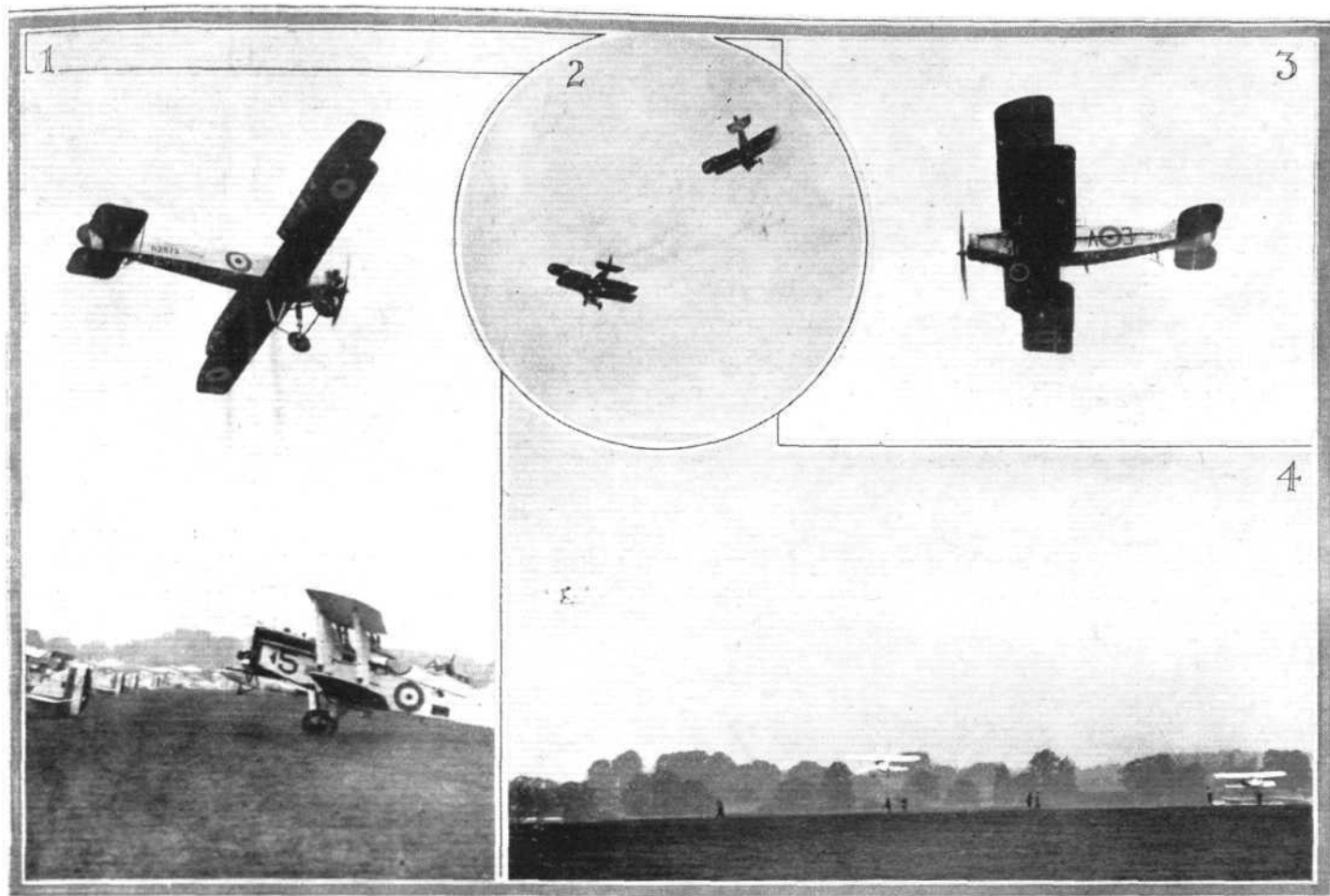
The weather was none too promising in the morning—a fine rain falling at intervals up to noon—but in spite of this spectators streamed into the aerodrome, on foot and in cars, from an early hour. Long before the main part of the programme started, at 3 p.m., all enclosures were well filled (it is reported that there were at least 80,000 present already by this time), and there was a steady and large influx during the next hour or so afterwards. Actual figures are not at the moment available, but we think there is little doubt that the attendance was, in spite of the uncertain weather, a record one, and well above last year's.

As on previous occasions, several "minor" events were held during the morning, but this time the morning show was quite a Display on its own. After the presentation, at 11 a.m., of the Sassoon Cup to Flying Officer A. H. Montgomery by the Marchioness of Cholmondeley, a start was made for the first event on the programme. This was a demonstration (and, in a way, a competition also) of radio-telephony and message picking-up-and-dropping as a means of communication between aircraft and troops on the ground.



THE R.A.F. DISPLAY : A corner of the enclosures showing "air-mindedness."

["FLIGHT" Photograph]



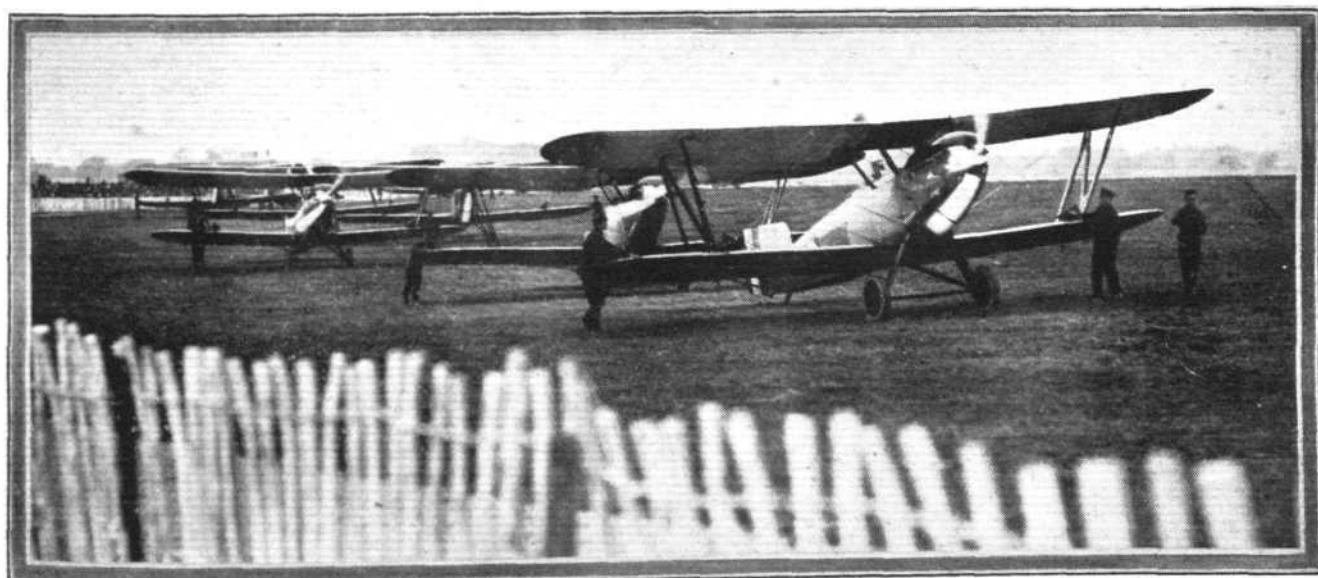
[“FLIGHT” Photographs]

**THE MORNING'S PROGRAMME :** 1, Aerobatics on an “Avro-Lynx.” 2, Duel between two Gloster “Gamecocks” from No. 23 (Fighter) squadron. The machines were piloted by F/O. F. F. Wilkinson and F/O. H. C. G. Dauncey respectively. 3, A “Brisfit” in the message-picking-up demonstration. 4, Start of the altitude race between “Gamecocks” and “Siskins.”

In this event, the good old “Brisfits” (Bristol Fighters) of the Army Co-operation squadrons, took part. In picking up its message, each machine flew low over the message station (there were two of these, located at different parts of the aerodrome) and secured—or tried to—its message, which was attached to a cord stretched loosely across the top of two poles, by means of a hook suspended beneath the fuselage. Having secured the message the observer hauled it in, called up the land wireless station and read out the contents of his message. He, in turn, was then called up by the land station by radio-telephony and was given further

orders. All these R/T. conversations were broadcast by the loud speakers, and it was as interesting to study the difference between the various observer's transmissions as it was to compare the varying skill of their pilots in picking up the messages.

After this came a handicap race, of about 27 miles, for Directorates of the Air Ministry. This produced six starters, as follows :—(1) Flt.-Lieut. E. F. Waring, D.F.C. (Director of Operations and Intelligence) on a Gloster “Gamecock” (Bristol “Jupiter”) at scratch. (2) Flt.-Lieut. A. L. Chick A.F.C. (Director of Personal Services) on a “Gamecock” at



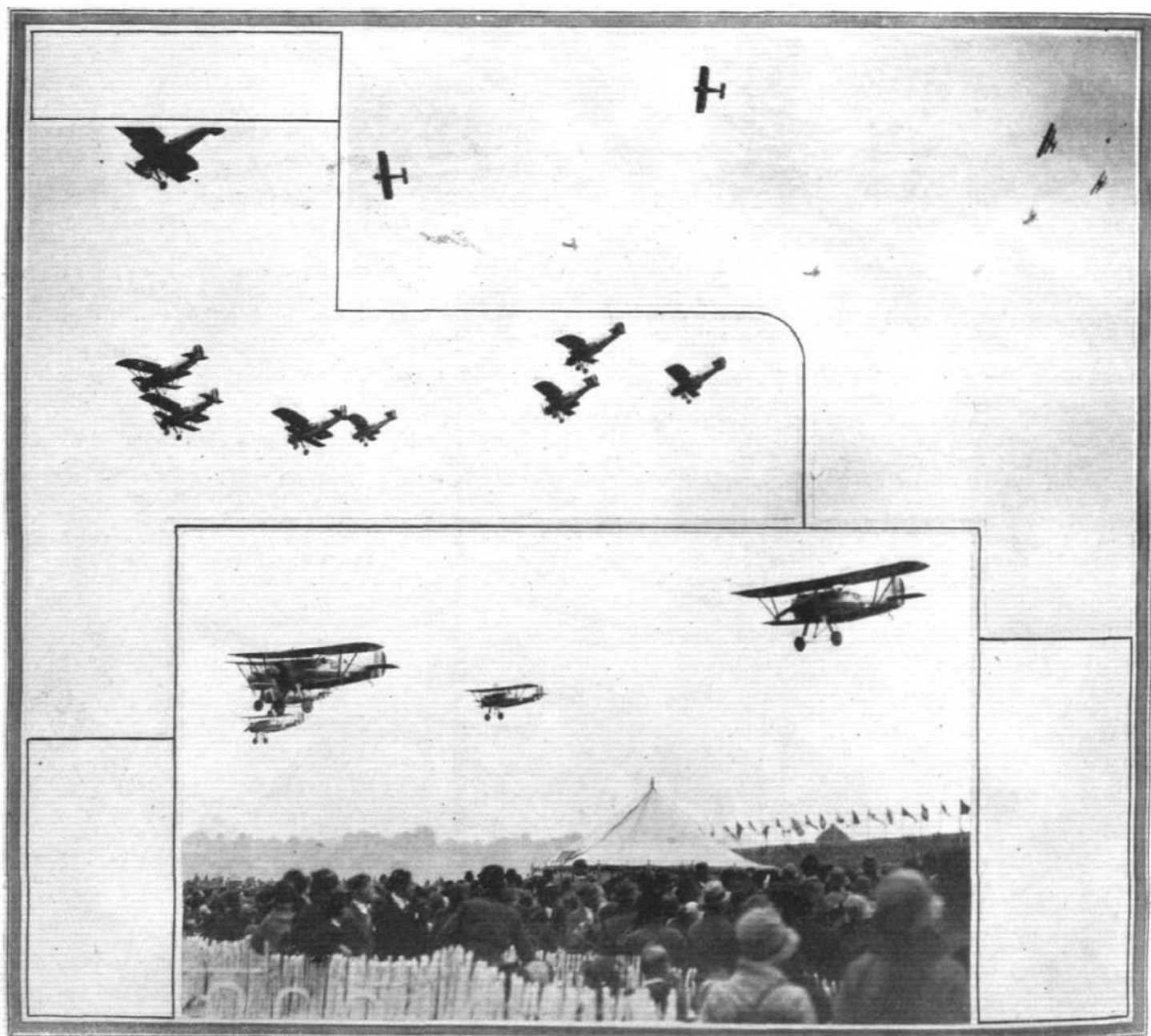
[“FLIGHT” Photograph]

**FOR EVENT NO. 1 :** A squadron of Fairey “Foxes” taxiing out in readiness for the exhibition of air drill by three day bombing squadrons.



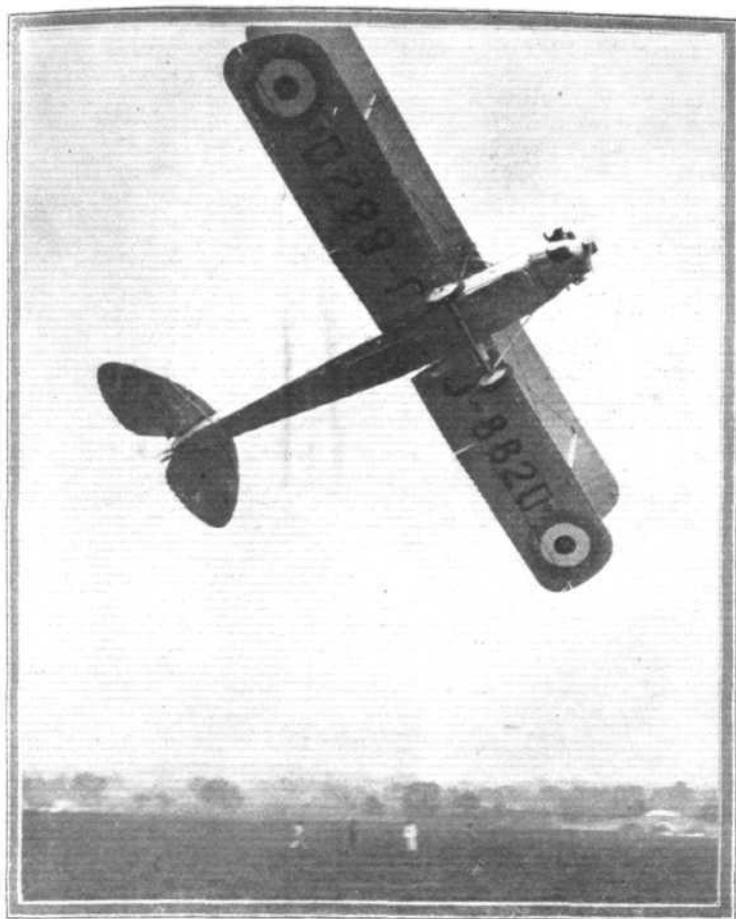
[ " FLIGHT " Photograph

**THE HANDLEY PAGE "HINAIDI" :** This machine, fitted with Bristol geared "Jupiter" engines, was the only one taking part in the Display of which no photograph was available for inclusion in our issue of last week.



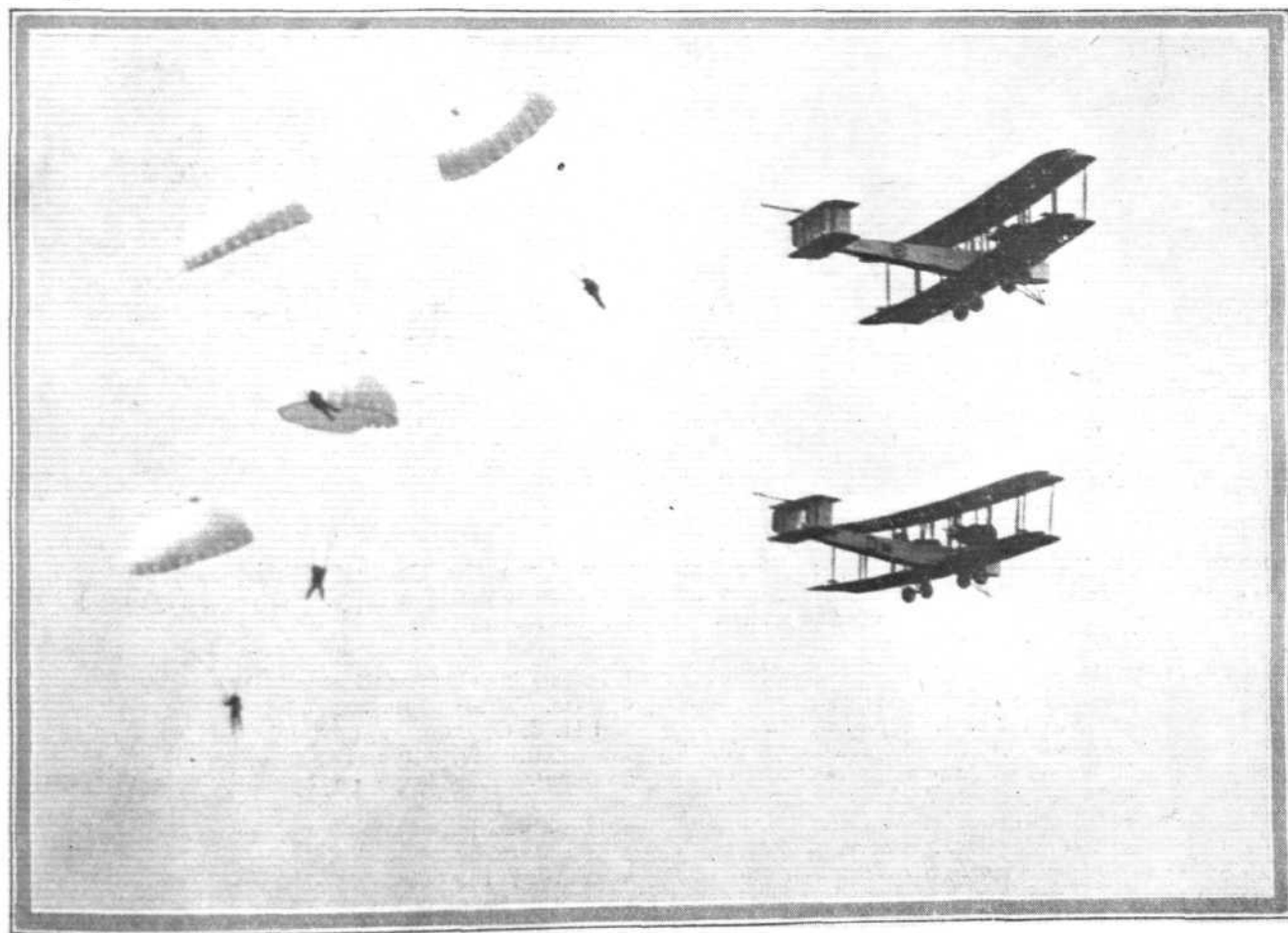
[ " FLIGHT " Photographs

**EVENT NO. 3 : Air Manœuvres to Music.** In the upper photograph : " Here we go round the Mulberry Bush." On the left : " Chick, Chick, Chicken." Unfortunately, the " eggs " were white, and do not show against the sky. Below : Returning to the tune of " Bill Bailey, will you please come home." The machines are Armstrong-Whitworth " Siskins " from No. 41 (Fighter) Squadron.



[*"FLIGHT" Photograph*]  
A "Genet-Moth" performing the unusual stunt of "skating" across the aerodrome on the side of its fuselage.

[*"FLIGHT" Photograph*]  
"SHOT DOWN IN FLAMES": Major "Sandbags" reached the ground safely by parachute.



[*"FLIGHT" Photograph*]  
AN EXTRA TURN: An unexpected thrill was provided by three Vickers "Vimys," each of which dropped two parachutists. Our photograph shows four of the six descending.

scratch. (3) Sqd.-Ldr. J. C. Russell, D.S.O. (Director of Organisation and Staff Duties), on a Hawker "Woodcock" ("Jupiter"), 68 secs. (4) Flt.-Lieut. R. S. Sorley, D.S.C., D.F.C. (Director of Technical Development), on a "Woodcock," 68 secs. (5) Sqd.-Ldr. P. Huskinson, M.C. (Director of Training), on a Fairey "Flycatcher" (Siddeley "Jaguar"), 96 secs. (6) Wing-Comdr. W. H. Primrose, D.F.C. (Director of Equipment), on a "Flycatcher," 96 secs.

This race resulted in a win for the last-named, who completed the course of two laps in 11 mins. 53 secs. "Operations and Intelligence" (Flt.-Lieut. Waring) came in second, and "Training" (Sqd.-Ldr. Huskinson) finished third.

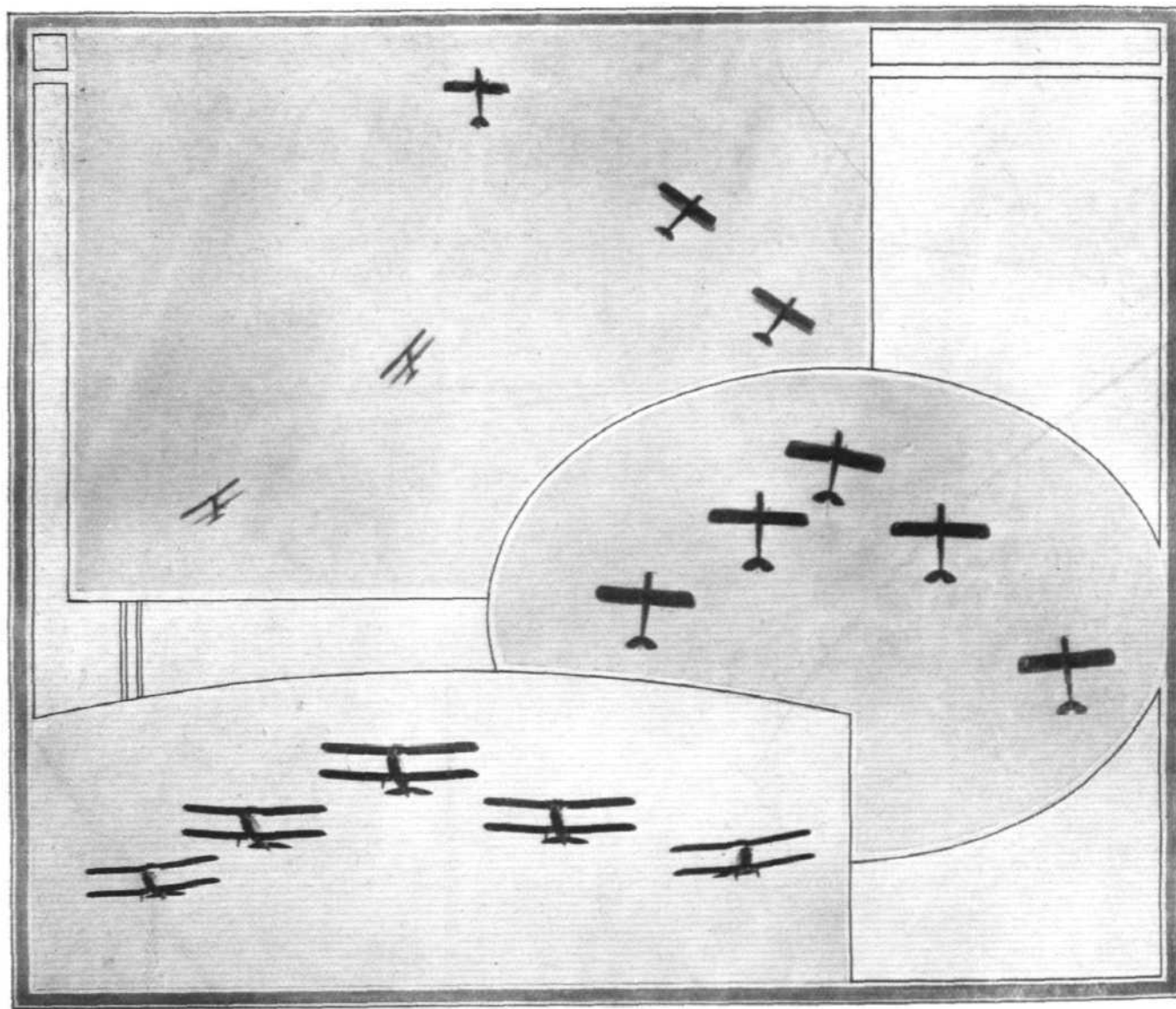
Just as the race finished, a heron flew over the aerodrome, and by the way it flapped its wings, it was obviously *not* of the Hawker variety, but one of Nature's own.

Another race followed for R.A.F. Reserve of Officers. This was a scratch race over one lap of about 14 miles, in

A.F.C., and F. J. Fogarty, D.F.C. According to the programme, they were to have flown simultaneously, one *over* each end of the aerodrome. They, however, seemed to be simultaneously all over it—at least, one of them (we think it was Flt.-Lieut. Fogarty) flew most of the time *on* the aerodrome! He was evidently working out a scheme for aerial lawn-mowers, while his colleague seemed to be practising some new steps for the Charleston. The former's evolutions consisted of banked turns, straights, and serpentines with wheels or wing-tips *actually touching the ground*, varied occasionally with a game of hide and seek with his colleague amongst the three squadrons of day bombers (D.H.9A and Fairey "Fox") which had just previously taken up their positions on the 'drome.

Anyway, it was a *most* painful exhibition—as far as our neck muscles and hearts were concerned.

After this came an aerial duel between two pilots of No. 23



[“FLIGHT” Photographs]

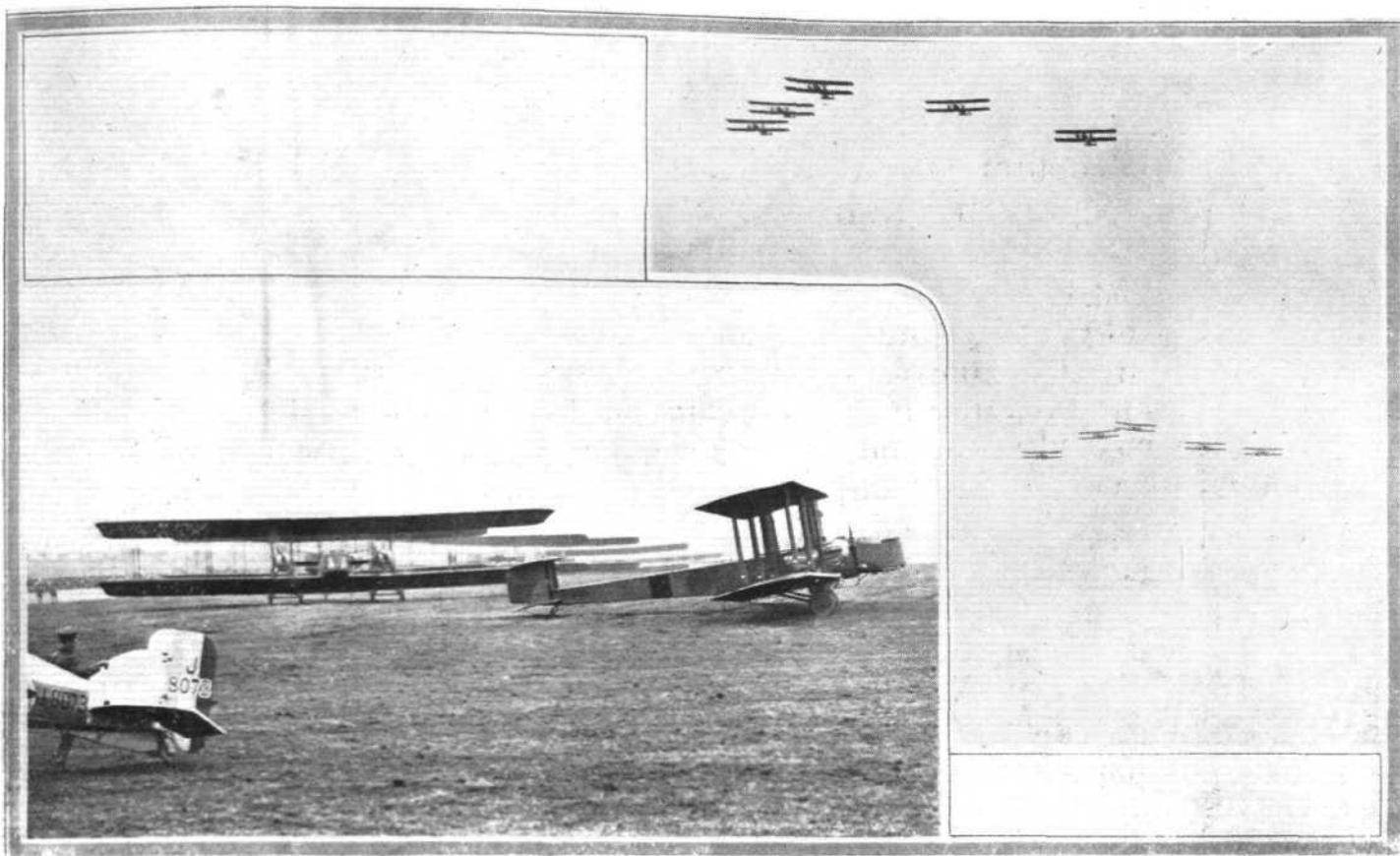
**AEROBATICS BY “GENET-MOTHS”:** Five instructors from the Central Flying School “evoluting” together. In the upper photograph the machines are just commencing a loop. On the right they are seen upside down. Below, in formation.

which there were five starters, all on Avro biplanes fitted with Siddeley “Lynx” engines, as follows:—(1) F./O. H. Davis (London De Havilland Aircraft Co.). (2) F./O. R. K. Rose (Bristol; Bristol Aeroplane Co.). (3) Flt.-Lieut. T. A. Thornton (Coventry; Sir W. G. Armstrong Whitworth Co.). (4) Flt.-Lieut. W. Jones (Glasgow; William Beardmore and Co.). (5) F./O. L. C. Hillman (Leeds; The North Sea Aerial and General Transport, Ltd.). This produced a close finish, Flt.-Lieut. Jones diving ahead of F./O. Hillman, and thus obtaining first place. The other three came in close behind (Coventry 3rd, and London 4th), but F./O. Rose was disqualified for not crossing the line correctly.

Then came one of the most remarkable displays of aerobatics, or crazy-crazy flying, we have yet witnessed. It was executed by two pilots, on Avro-Lynx biplanes, from No. 2 Flying Training School, Digby—Flt.-Lieuts. H. T. Lydford,

(Fighter) Squadron on Gloster “Gamecocks” with “Jupiter” engines. These pilots were Flying Officers F. F. Wilkinson and H. C. G. Dauncey (not Flight-Lieut. H. C. Calvey and Pilot Officer H. A. Purvis, as originally down on the programme). They gave an excellent display, putting their machines through all manner of evolutions in an effort to obtain a position of advantage, one over the other.

The next event, an altitude race, was, unfortunately, marred by the weather conditions, the very low clouds preventing the pilots from reaching the high altitudes expected, besides making it impossible for the spectators to see anything of the competitors after they had taken off. Four pilots took part in this event—Flying Officer A. W. B. McDonald, of No. 23 Squadron, and Flight-Lieut. J. A. Boret, M.C., A.F.C., of No. 32 Squadron, both on “Gamecocks” (“Jupiter”); Pilot Officer T. G. Pike, of No. 56 Squadron,



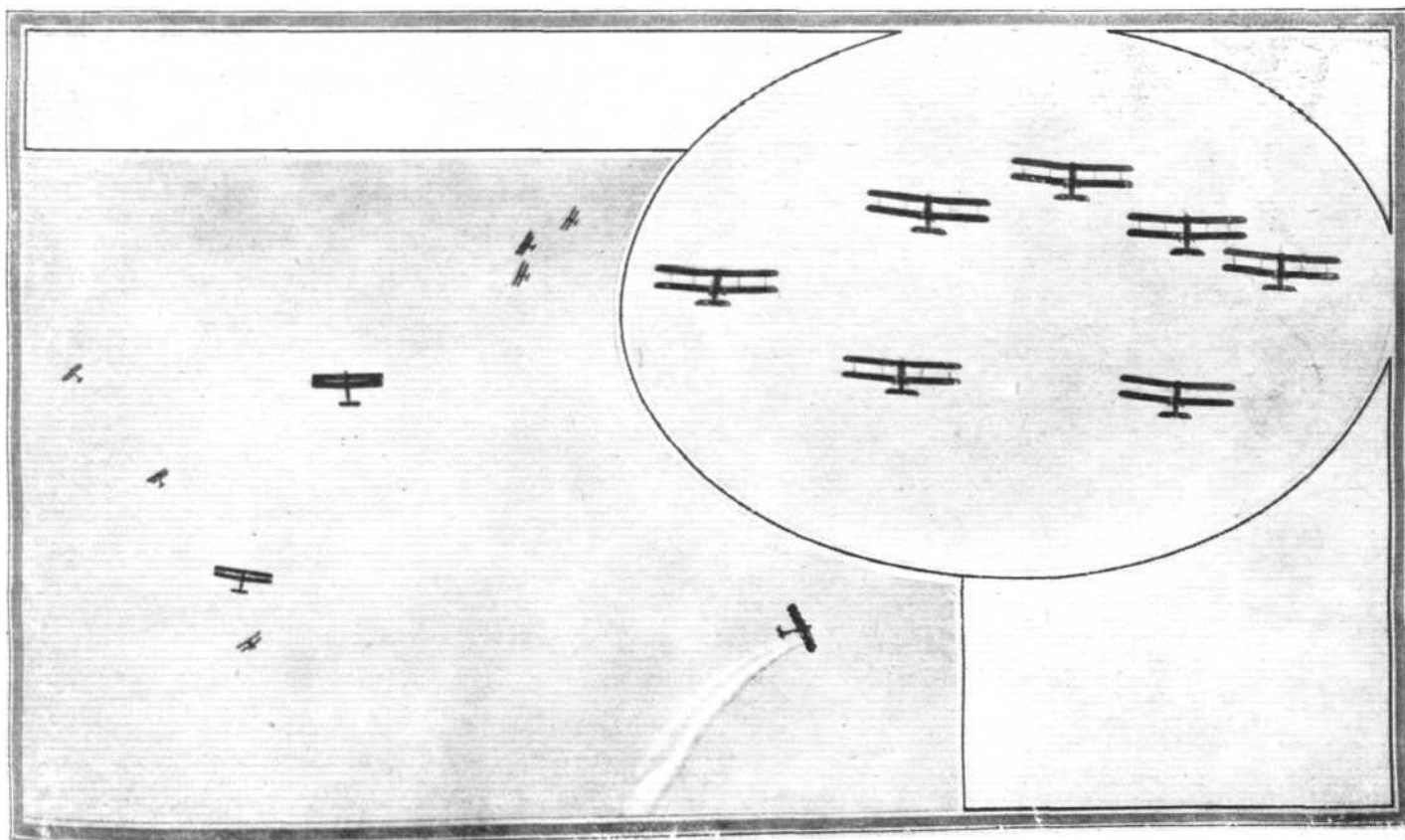
[ " FLIGHT " Photographs ]

**DEPARTURE OF THE NIGHT BOMBERS :** Below some of the " Virginias " taxiing up for event 7. On the right, the three squadrons in flight, No. 7 (Worthydown) in the lead, followed by No. 9 (Manston) and No. 58 (Worthydown).

and Flying Officer G. B. M. Rhind, of No. 111 Squadron, both on " Siskins " with supercharged " Jaguars." The pilots, who were provided with oxygen and electrically heated clothing, had to climb as high as possible in 15 minutes.

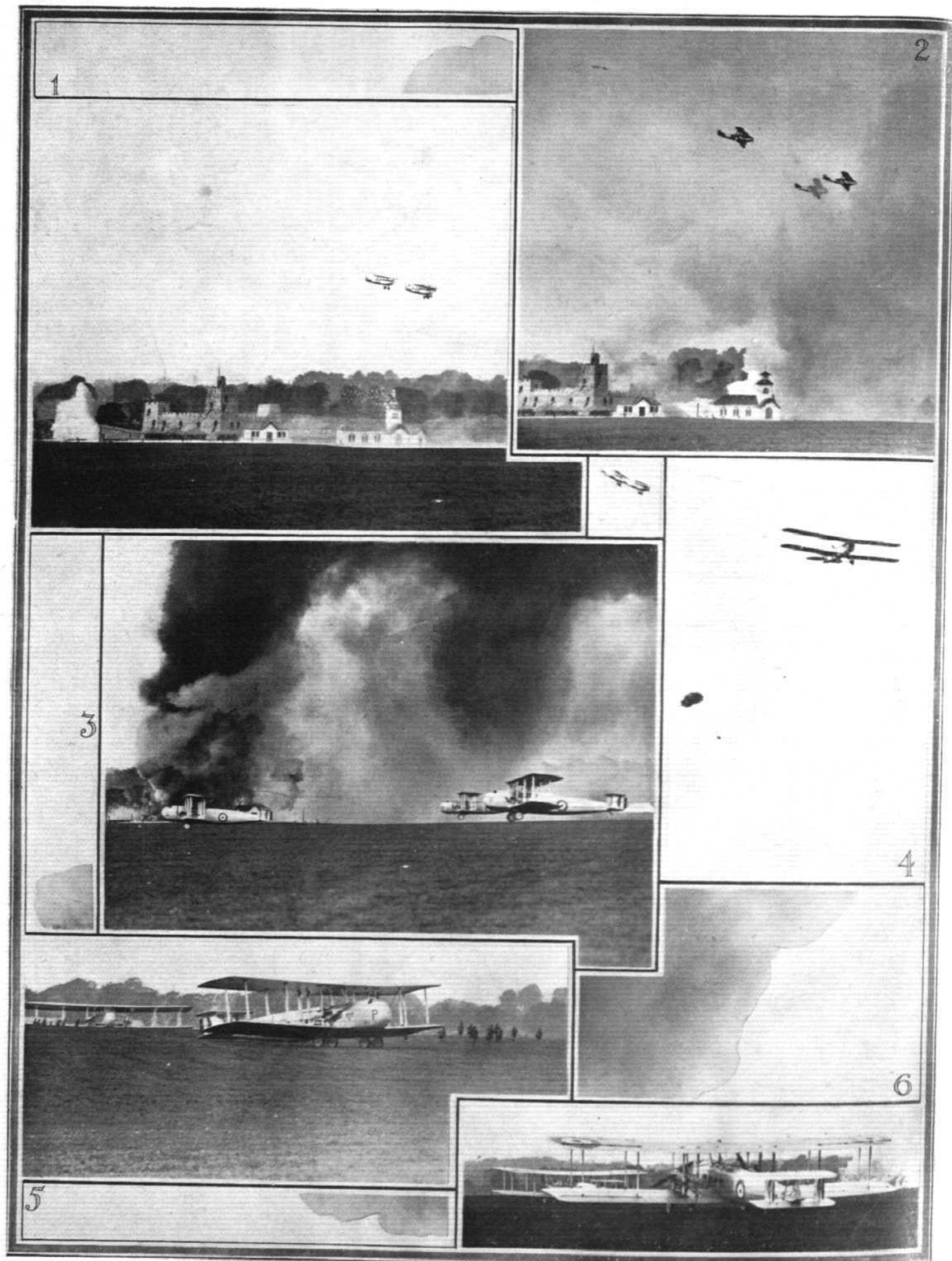
They started simultaneously and were soon lost to view in the low clouds, but the noise of their engines could be heard for some time.

While this invisible event was in progress Sqdn.-Ldr. H. G.



[ " FLIGHT " Photographs ]

**EVENT 9, AN AIR ATTACK ON LONDON :** The upper photograph shows an " enemy " squadron of day-bombers (D.H.9's) arriving. These are followed, in the lower picture, by another squadron of " enemy " machines (Vickers " Virginias " night-bombers), which are being attacked by defending single-seater fighters (Gloster " Grebes "), and one is seen " in flames."



**THE R.A.F. DISPLAY :** Bombing of the Village of " Hunyadi Janos in Irquestine." 1, shows the effect of the first bombs, dropped by Fairey " Foxes." In 2, after further attacks, the village is well alight, while in 3, even the church has caught (in spite of the official programme). Vickers " Victorias " are seen in 3, alighting with troops and machine guns, while 4 illustrates how food and medicine is dropped by parachute. Troops are deplaning in 5, and getting ready to take part in the fight, and finally, women and children are taken away to safety by the " Victorias " in 6.

Smart, O.B.E., D.F.C., A.F.C., gave an exhibition of crazy flying on a D.H. "Moth" with "Genet" engine, during which he performed some startling and weird evolutions.

This was followed by a series of exhibitions of individual aerobatics by four pilots—Flying Officer A. H. Wheeler and Sergt. H. A. Marsh, of No. 111 (Fighter) Squadron, on Siskins ("Jaguars"), and by Flying Officer R. H. Horniman and Sergt. M. Low, of No. 32 (Fighter) Squadron, on "Gamecocks" ("Jupiters")—the last two flying simultaneously. These pilots were considerably hampered by the low clouds, but nevertheless put up remarkable performances, executing all the various stunts, such as loops, rolls, spins, etc., at a comparatively low altitude. This concluded the "first house," and we all got ready to see the other good things that had been provided for us from 3 to 6 p.m.

A few minutes before 3 p.m. the King and Queen entered the aerodrome and drove past the enclosures to the Royal box. As the band struck up the National Anthem the squadrons of day bombers took off for the first event, Group Evolutions. This event was an exhibition of drill in the air by three Day Bombing squadrons—No. 12, Andover, under Sqd.-Ldr. T. E. Salt, A.F.C., on Fairey "Fox"; No. 39, Spittlegate, under Sqd.-Ldr. H. V. Champion de Crespigny, M.C., D.F.C., on D.H.9A—Liberty; and No. 207, Eastchurch, under Sqd.-Ldr. J. B. Graham, M.C., A.F.C., also on D.H.9A—Liberty.

As on previous occasions, the squadrons took off in formation, a very imposing spectacle, and once in the air they went through all the different evolutions of air drill. This year, we thought, the formation did not present that exactness and smart Guard-like regularity of previous demonstrations. It must be remembered, however, that the low clouds again made matters somewhat difficult—in fact when changing formation outside the aerodrome on one occasion, two of the D.H.9A's of No. 39 "touched," one being slightly damaged. It was, however, brought skilfully to earth by its pilot and nothing more serious resulted as it might easily have done.

The special point of interest about this event lay in the comparison as regards performance of the D.H.9A's and the Fairey "Foxes," especially when, on one occasion, all three formations passed over the aerodrome, the D.H.9A's in advance and the "Foxes" behind but rapidly overhauling the former, and eventually passing ahead in between their formations.

The demonstration of converging bombing that followed was as lively as ever, and created much excitement. It was given by four "Grebe-Jaguars" from No. 25 (Fighter) Squadron piloted by Flight-Lieut. S. T. B. Cripps, D.F.C., and Flying-Officers L. E. Maynard, K. K. Brown and R. J. A. Ford. The target (according to the programme, a moving one) was a tank, which after being hauled out on the 'drome, dozed peacefully during the attack. The latter consisted of a rapid series of successive swoops on the part of the "Grebes" from rapidly changing directions. When about 50 ft. above the tank each machine discharged its bomb—no bomb sights being used—and then zoomed away to make another onslaught. After the first few bombs we could not see the tank for smoke, so could not spot the hits, but they all seemed uncomfortably close.

A new and highly original event came next, one that was much appreciated by all present. This was Air Manœuvres to Music, carried out by No. 41 (Fighter) Squadron under Sqd.-Ldr. F. Sowrey, D.S.O., M.C., A.F.C., on "Siskins." It must be explained first of all that the music of the band was transmitted to each pilot by radio-telephone, while the instructions given by Dancing Master Sowrey—who did not fly in formation with his squadron but at a short distance off—were heard, by the same means, by the spectators on the ground, via the loud speakers.

On the band striking up "I'm an airman" the squadron took off in formation and flew away to this tune. Then the tune changed to "Chick, Chick, Chicken" at which we heard the order given to turn back over the aerodrome, followed by "Prepare to Lay Eggs." As the machines passed over the 'drome in single line abreast, large white eggs fell to the ground! The next movement was particularly striking, for as the band switched over to "Here we go round, etc." the machines suddenly broke into single file and chased each other's tails!

To the next tune, "Rolling Home," all simultaneously rolled over, while to the "Froth blowers' Anthem" they all looped together. Finally, the squadron flew past the Royal Box, and saluted, to the Royal Air Force March, and then came back and landed to the strains of "Bill Bailey, will you Please Come Home." It was a well-planned turn, well carried out.

The Taxi-cum-Fly past (or Parade) of new and experimental machines, which followed, was, if anything, much more

interesting than previous ones. For one thing, the machines were more new and less experimental! After taxiing past the enclosures the machines turned and took off—and here the variety of unstickings was most interesting to see—so that presently the sky was churned up by no fewer than fifteen different types of aircraft, which was a sight in itself well worth seeing. The types that took part were as follows: Gloster "Gamecock" ("Jupiter"), No. 8073, winner of the Sassoon Cup; Armstrong-Whitworth "Atlas" ("Jaguar"), Army Co-Op.; Short "Chamois" ("Jupiter"), Army Co-Op.; Gloster "Goring" ("Jupiter"), day bomber; Hawker "Horsley" ("Condor"), day bomber; Boulton and Paul "Sidestrand" (2 "Jupiter"), day bomber; Fairey IIF ("Lion"), day bomber; D.H. "Hound" ("Lion"), general purpose; Vickers' "Valiant" ("Jupiter"), general purpose; Westland "Wapiti" ("Jupiter"), general purpose; Bristol "Bull Dog" ("Jupiter"), day and night fighter; Handley Page "Hinaiidi" (2 "Jupiter"), night bomber; Avro "Ava" (2 "Condor"), day bomber; Handley Page "Hamlet" (2 "Lynx"), civil air transport; Westland "Pterodactyl" ("Cherub"), aerodynamic research.

Two more remarkable demonstrations of crazy flying followed, this time by Sq.-Ldr. Smart on the "Genet-Moth," and by Sq.-Ldr. J. Noakes, A.F.C., M.M., on the Avro Monosoupe. Both pilots would slither and dither hither and thither until one felt quite bewildered.

Before we were sufficiently recovered another startler was served up. This was a display of simultaneous aerobatics given by five instructors from the Central Flying School on D.H. "Moths" with "Genet" engines—the pilots being Flight-Lieut. D. D'A. A. Greig, D.F.C., and Pilot Officers A. E. Beilby, G. H. Stainforth, R. L. R. Atcherley, and H. R. D. Waghorn.

It was one of the prettiest and neatest displays of simultaneous starting in formation we have seen, the relatively slow speed of the "Moths" adding considerably to the effect. Two evolutions in particular appealed to us, one simple but beautiful, the other difficult and startling. In the former the five machines flew in *very close V* formation; then, one saw this "V" get bigger and bigger, as they flew across the aerodrome—a most weird effect to the eye. Secondly, again flying in close V formation, all five simultaneously turned over on their backs and flew thus upside down!

Meanwhile four squadrons (of five machines each) of night bombers had taken up position on the 'drome, the huge twin-engined machines making an imposing array. These were the four squadrons which took part recently in the reliability test over a 400-mile course, and after the last-mentioned event they took off in the order of the result, which was as follows:—(1) No. 7, Worthydown, under Wing-Comdr. C. F. A. Portal, D.S.O., M.C. (2) No. 9, Manston, under Wing-Comdr. C. C. Durston. (3) No. 58, Worthydown, under Sq.-Ldr. A. T. Harris, O.B.E., A.F.C.—all Vickers' "Virginia's" with Napier "Lions." (4) No. 99, Bircham Newton, under Wing-Comdr. B. E. Smythies, D.F.C., Handley Page "Hyderabad's" with "Lions." After circling the aerodrome they flew past the enclosures in formation—a splendid sight.

Then followed a very popular event—the attack on and destruction of a kite balloon. The latter ascended to about 600 ft., with our old friend, Maj. Sandbags, in charge when there came along an interfering patrol of nine "Grebes" of No. 19 Squadron, one of which detached itself from the formation, made for Rupert, and fired a few rounds into his wobbling sides. Just as Maj. Sandbags remembered his parachute and an important engagement, a tiny red flame appeared on Rupert's side, and a few seconds later a huge sheet of flame with clouds of dense smoke enveloped the whole of his (Rupert's) envelope. The final descent of the fiery and smoky furnace was certainly a thrilling sight.

Now came one of the most realistic events the Display has ever produced, an air battle or daylight attack on London.

A "hostile" squadron of bombers (D.H. 9a of No. 39) was seen approaching the aerodrome, over which they were met by one of the two defending fighter squadrons ("Grebes," of Nos. 19 and 29), and a right royal battle ensued. Both sides suffered casualties, several bombers and fighters coming down in flames (supplied by Holt Flares, Ltd.), and trails of smoke. The bombers turned away, but a second "hostile" formation approached, this time of twin-engined bombers ("Hyderabad's," of No. 99), and these were tackled by the other fighter squadron, with far more effective results, the bombing formation being broken and most of them brought down in flames.

Finally, all remaining bombers made one more effort to

break through, but a concentrated attack by the fighters completely routed the invaders, and more came down—in flames, of course. It was splendidly "staged," and immensely thrilling.

An unexpected event figured next. Three Vickers "Vimy" biplanes suddenly appeared over the aerodrome, and it was seen that a man was standing at each wing tip. When over the centre of the 'drome, some 800 ft. up, a small white speck darted out behind each man, and before one hardly realised it, six men were floating gracefully to earth in parachutes! Incidentally, two of the parachutes touched, but drifted apart again. This "extra turn" was provided by the Henlow Parachute School, in charge of Flight-Lieut. Potter.

Whether or not the arrival of the six parachutists without the gates of the Eastern village of Hunyadi Janos, in Irquestine—which had up to now slumbered peacefully on the far side of the aerodrome—annoyed the natives, we cannot tell. Anyway, immediately after the "drop" some considerable activity was observed, which, unfortunately for the European

settlers there, rapidly developed into hostility. However, a patrolling R.A.F. aeroplane noticed the Europeans' plight, and we heard him call for help (what a nice voice that loud-speaker announcer had!) This was immediately forthcoming, for as the white women and children (quite healthy youngsters, the latter) escaped into the open, No. 12 Squadron (Fox bombers) flew over from Andover and commenced a repeated series of attacks on the village and natives.

Meanwhile, the Europeans, hard pressed by the pretty-coloured natives, were starving, so Squadrons 600 and 601 (D.H. 9a), Auxiliary Air Force, thoughtfully flew from Hendon with provisions, which they delivered by parachutes. While the Foxes continued to bomb the village—by now well alight, even to the "mud" fort—three "Queen Victorias" (as per loud speaker) arrived on the scene, deplaned reinforcements with machine guns, emplaned the women and children, and flew off with them to a place of safety. The sounding of the "Cease Fire" by R.A.F. trumpeters, and the departure of Their Majesties marked the end of a perfect day.

## The Royal Aero Club of the United Kingdom

OFFICIAL NOTICES TO MEMBERS

A COMMITTEE meeting was held on June 29. *Present*:—Brig.-Gen. Lord Thomson, P.C., C.B.E., D.S.O. (in the chair); Griffith Brewer; Sir Alan J. Cobham; Lieut.-Col. M. O. Darby; Wing-Commander T. O'B. Hubbard, M.C., A.F.C.; Col. F. Lindsay Lloyd, C.M.G., C.B.E.; F. Handley Page C.B.E.; Maj. H. Petre, D.S.O.; Capt. C. B. Wilson, M.C.; H. E. Perrin, secretary; B. Stevenson, assistant secretary.

Minutes of meeting held on May 11, 1927, were confirmed and signed.

**Election of Members.**—The following new members were elected:—Capt. J. Y. M. Broderip, J. E. B. D. Cochrane, E. R. King, R. Malcolm, Lieut. L. G. Richardson, R.N., Flight-Lieut. A. Jerrard, V.C., Capt. A. C. Bonvalot, Sqdn.-Ldr. C. J. W. Darwin, G. R. Beck.

**Aviators' Certificates.**—The following aviators' certificates were granted:—

- 8100 Neville Montefiore, D. H. School.
- 8101 E. L. D. Moore, R.N., London Aeroplane Club.
- 8102 Alfred Benson, Lancashire Aero Club.
- 8103 Dudley Nelson, ditto.
- 8104 Vivian F. Crosthwaite, ditto.
- 8105 Kenneth Bowen, Hampshire Aeroplane Club.
- 8106 John J. Hoder, London Aeroplane Club.
- 8107 Richard P. Cooper, ditto.
- 8108 Ivor H. McClure, ditto.
- 8109 Anthony Milburn, Yorkshire Aeroplane Club.
- 8110 Hans I. Westman, Henderson's School.
- 8111 Lieut. Francis W. N. Bassett, R.A.F. Leuchars.
- 8112 Lieut. Richard Barrett, R.N., ditto.
- 8113 G. H. B. Madocks, Henderson's School.

**Scheme of Association of Aero Clubs.**—The secretary reported that the following 10 clubs had adopted the scheme of association with the Royal Aero Club and had signed the agreement:—

- Halton Aero Club.
- Hampshire Aeroplane Club.
- London Aeroplane Club.

- Lancashire Aero Club.
- Midland Aero Club.
- Newcastle-on-Tyne Aero Club.
- Norfolk and Norwich Aero Club.
- Royal Aircraft Establishment Aero Club.
- Suffolk Aeroplane Club.
- Yorkshire Aeroplane Club.

The chairman and secretary were authorised to sign the agreement with the clubs on behalf of the Royal Aero Club.

**Racing Committee.**—Report of meetings of Racing Committee held on June 17 and 21, 1927, was received. The following items were included in the report:—

1. **Air League Challenge Cup.**—Decision as regards pilots and maximum weight of competing machines.
2. **Racing Regulations.**—Decisions as to minimum length of circuit.
3. **King's Cup.**—Decision not to hold the race at Bourne-mouth. Consideration of the following centres for the race:—LONDON—LYMPNE—NOTTINGHAM

4. In the interests of safety the Royal Aero Club have decided that all aircraft competing in races under the competition rules of the Royal Aero Club must satisfy the Club that the view from the aircraft is sufficiently good to avoid unnecessary danger of collision. The club reserves the right to refuse any entry on this ground.

The report was adopted.

**Official Timekeepers.**—The following official timekeepers of the Royal Aero Club were appointed for the current year:—F. T. Bidlake; A. Geo. Reynolds; A. V. Ebbelwhite; J. H. Burley; Major A. H. Loughborough, R.A.; T. D. Dutton; Col. F. Lindsay Lloyd, C.M.G., C.B.E.; J. E. Rhodes; H. N. Ellis; A. Fattorini; R. G. Spikins.

Offices: THE ROYAL AERO CLUB,

3, CLIFFORD STREET, LONDON, W. 1.

H. E. PERRIN, Secretary.

### The Aviation Ball

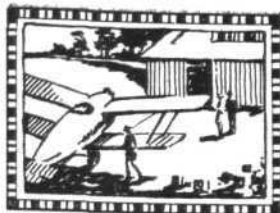
THE Aviation Ball held at the May Fair Hotel on June 30, in aid of the National Fund for the Promotion of Aeronautics, was a great financial and social success. About 350 people attended, including, General Balbo and other members of the Italian Mission now in this country; Lady Bailey, the Duchess of Bedford, Lady Louis Mountbatten, the Marquis and Marchioness Cholmondeley, Lady Beaverbrook, Lord and Lady Apsley, Mr. and Mrs. Soanes Lendrum, Capt. F. L. Barnard, Mr. F. Sigrist, and Flight-Lieuts. S. Carr and Gillman.

The first prize in the lucky draw was won by Sqdn. Ldr. R. de H. Haig, the prize being a gold cigarette case. Messrs. Imperial Airways and the De Havilland Aircraft Co. gave their co-operation in many ways.

### A New Air Transport Scheme.

THE A.D.C. Aircraft, Ltd., have put into commission six machines for air transport work, such as urgent press work, aero photography, etc. For this purpose they are well equipped, having very large resources at their extensive factory on one side of the Croydon Aerodrome. They are making a special point of reliability, and will always have spare machines available for emergencies. Their position at Croydon is very favourable for obtaining the latest weather reports and other Air Ministry information. This branch of their activities has been placed in the charge of Captain T. Neville Stack, A.F.C., who flew to India in a "Moth" recently, in company with Mr. Leete. Important contracts have already been successfully carried through, mostly in connection with press work.

## PRIVATE



## FLYING

A Section of **FLIGHT** in the Interests of the Private Owner, Owner-Pilot, and Club Member

## GERMAN LIGHT 'PLANES VISIT ENGLAND

6,000 Miles Across Country on 20 H.P.

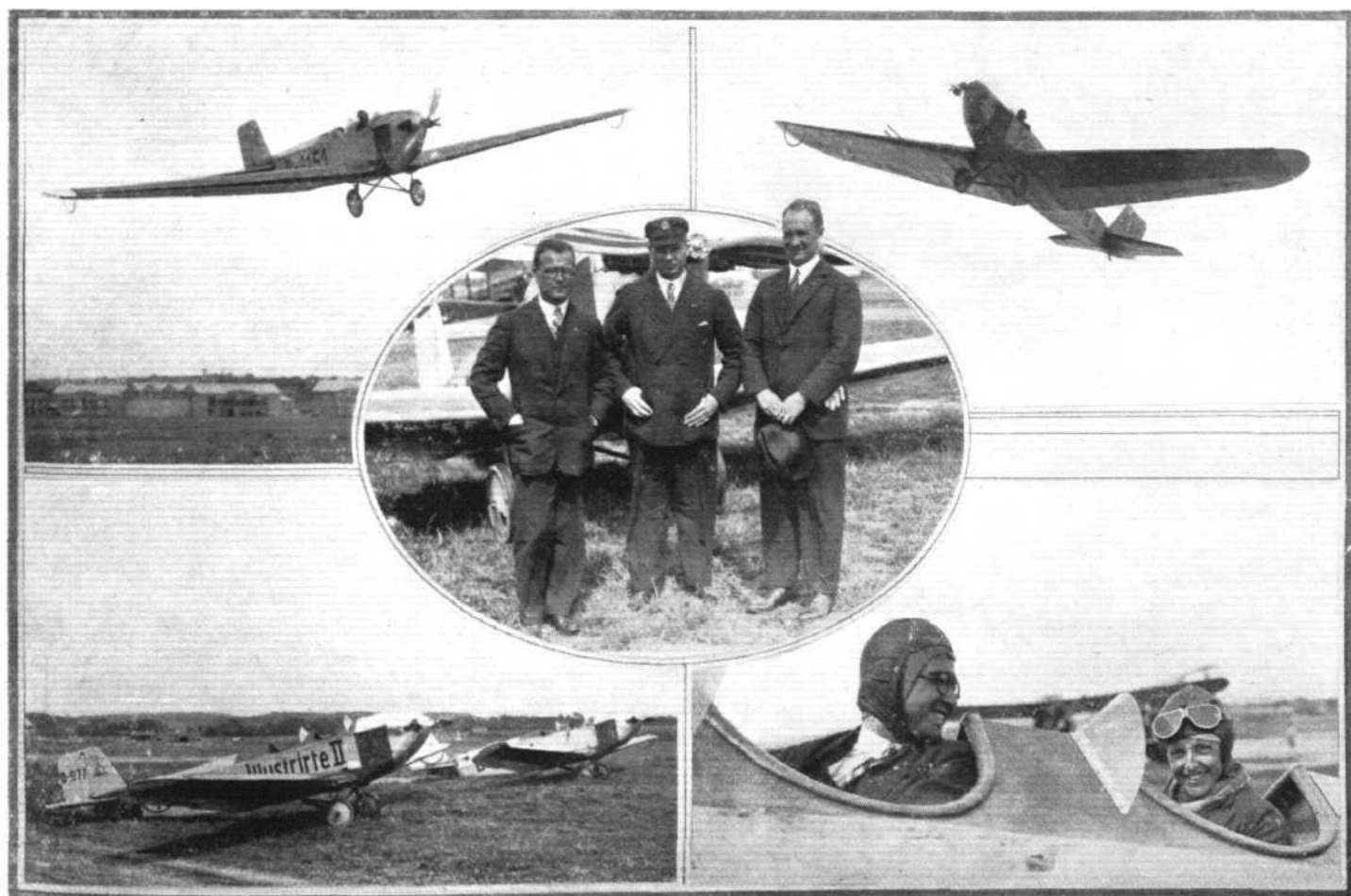
WHILE we in this country have rather got away from our early ideal, a light aeroplane of really low power, the same does not quite appear to be the case in Germany. Something of a parallel is found in the history of gliding. In 1922 the Germans made history in the Rhön hills, and the following year we took up the subject and held our Itford meeting. Maneyrol remained aloft for more than three hours, thereby establishing a "record," and incidentally killing gliding in this country. Everyone said, "Evidently, given sufficient wind, there is nothing in it." Our next step was the light 'plane competition for single-seaters with motor-cycle engines, held at Lympne. The following year we had advanced to two-seaters, still with relatively small engines, but because the engines in that competition gave, on the whole, a great deal of trouble, we increased the engine capacity. We have now arrived at machines of the "Moth," "Widgeon," "Avian" and "Blue Bird" type, with engines of 65-80 h.p. That, in broad outline, is the development of the light 'plane in England.

In Germany, on the other hand, they still hold their glider meetings in the Rhön and at Rossitten. They have fitted these gliders with small engines, with varying success, and they have produced machines with slightly more power, just as we have—with this difference, however: that, whereas in this country the 75 h.p. machine has become very

firmly established, and the light 'plane (as we originally understood the term) has all but disappeared, in Germany they do not appear to have come to any definite decision, nor are they in the fortunate position of having subsidised clubs. Thus at present both the light 'plane and the "slightly sligher 'plane" are being used, and at the moment it is impossible to foresee which type will win. Certainly the really low-powered machines have put up some remarkable performances.

Among the types that have made history are the little Daimler L.20 monoplanes, of which two specimens were produced for, and took part in, the German *Rundflug* in 1925. Later machines of the same type have flown over the Alps in midwinter, as recorded in *FLIGHT*, and have flown thousands of miles across country. Quite recently this type of machine won the King's Cup and the Belgian Aero Club's Cup in the Belgian light 'plane competition at Brussels. Last week two L.20 monoplanes arrived at Croydon from Brussels on a short visit to this country, and on Thursday last these machines were demonstrated before representatives of the aviation press and others interested.

The accompanying photographs will give a good idea of the general lines of the L.20, which are low-wing cantilever monoplanes, equipped with Mercedes engines of 20 h.p. or so. One machine arrived at Croydon from Brussels on Tuesday,



[ "FLIGHT" Photographs ]

GERMAN LIGHT 'PLANES VISIT ENGLAND : These photographs show the Klemm-Daimler L.20 machines on the ground and in flight. In the lower right-hand corner Lady Bailey is seen at the start of a flight with Herr Lusser. In the centre the three German pilots who visited this country. They are, from left to right, Herr Lusser, Herr Siebel, and Herr Lörzer.

and the other on Wednesday of last week, the three German pilots who made up crew and passengers being Herren Lusser, technical director of the Klemm Light 'Plane Works of Sindelfingen, Lörzer, who took part in the *Rundflug* on a Daimler machine, and Siebel, pilot and member of the firm.

At the demonstration at Croydon, Herr Lusser did most of the flying, and showed up the machine to best advantage, although water in the carburettor interfered somewhat with the exhibition. The machine left the ground after an incredibly short run (there was a fairly strong wind blowing at the time), and climbed very well. Immelmann turns were carried out repeatedly, as well as some of the tightest loops we have ever seen, the machine apparently losing no height in the loops. The loops seemed to be of a diameter very little more than about twice the length of the machine, and vertical turns were equally short. Certainly the machine was, obviously, both controllable and manoeuvrable. Flat glides and steep glides were made, and on landing the machine pulled up after a run of a couple of dozen feet or so. Doubtless what helps to make the machines so controllable is the type of double aileron fitted. This was described in *FLIGHT* at the time of the *Rundflug*, but it may be as well to recall here that the aileron consists of an ordinary trailing-edge flap to which is coupled a pivoted wing tip. Whether or not the wing tip is slightly overbalanced so as to form a sort of horn balance for the trailing-edge flap is not known. It could be so made, although it need not be, all according to where its centre of pivoting is in relation to its centre of pressure. That the combination is efficient seems obvious. Even during stalls the machine appeared to require very little aileron control, nor did it seem to have any tendency to go into a spin.

During the afternoon several passengers were taken up, among them being that flying enthusiast Lady Bailey, who went up with Herr Lusser and took control of the machine. In spite of the gusty wind and the light wing loading, the L.20 seems to be very steady in the air. We gather that the two machines are likely to remain in this country for some little time, and it is to be hoped that they will pay a visit to some of our light 'plane clubs, such visits being most valuable in promoting good feeling among light 'plane enthusiasts in the two countries.

Before dealing with the L.20 machine, a few words concerning its constructors may be of interest. Originally the Sindelfingen works where the L.20 machines were built was a branch of the Mercedes-Daimler Co. The designer of the machines is Herr Klemm, who is still associated with the Mercedes firm, although a new company has now been formed, entirely independent of the main firm, under the name Klemm Light 'Plane Works, Sindelfingen. Of the new firm Herr Lusser, one of the pilots who visited Croydon, is technical director. Piloted by Herr Lusser, one of the L.20 monoplanes has recently made a flight from Sindelfingen via Hamburg to Scandinavia and back to Sindelfingen via Berlin. This machine, we were informed, has actually covered something like 10,000 km. (6,000 miles) since the beginning of May without the engine being overhauled. At Croydon it looked little the worse for its mileage.

The Klemm-Daimler L.20 is, as already stated, a low-wing monoplane, of the pure cantilever type. The construction is along orthodox lines, with wood playing a predominant part. The wings are covered with plywood, and are detachable at the fuselage from a fixed wing root. They do not fold, so that the operation of dismantling takes rather long according to British ideas. The undercarriage is of the divided

type, the telescopic member running to the wing root, with the shock absorbers partly housed inside the wing.

The Mercedes engine is a flat twin air cooled, of 885 c.c. capacity. It is neatly cowled in, and even the inner portion of the propeller is practically free of interference. A high compression ratio is employed (7 to 1) and normally the fuel used is a mixture of 60 per cent. benzol and 40 per cent. petrol. The reduction gear (ratio 3 to 1) which has been incorporated, has considerable effect on the performance of the machine. The maximum permissible speed of the engine is 3,000 r.p.m., so that airscrew speed never exceeds 1,000 r.p.m. Consequently the propeller efficiency, especially during taking off and climbing, is uncommonly good. Doubtless this fact is largely responsible for the "strong" flying of the machine, without any impression of being underpowered. In point of fact, it seems likely that at the minimum power required nearly 50 per cent. of the engine power is in reserve.

Detail performance figures are not available, but we understand that the top speed is in the neighbourhood of 120 km./h. (74.5 m.p.h.), while the machine cruises at 100-110 km./h. (62-67 m.p.h.). The actual stalling speed is not definitely known, but at Croydon the machine floated along at certainly less than 20 m.p.h. against the wind. Stalled descents along a steeply inclined flight path seem quite feasible on this machine, without any signs of loss of control.

The main data of the Klemm-Daimler L.20 are: Wing span, 13 m. (42 ft. 7 in.); wing area, 20 sq. m. (215 sq. ft.); weight empty, 265 kg. (583 lb.); fuel for four hours, 25 kg. (55 lb.); useful load, 160 kg. (352 lb.); total loaded weight, 450 kg. (990 lb.); wing loading, 4.6 lb./sq. ft.; power loading (on 20 h.p.), 49.5 lb./h.p. Actually the engine must develop considerably more than 20 h.p., but even assuming 30 h.p., the power loading is still very high (33 lb./h.p.).

The reason for the amazing efficiency of the L.20 is not far to seek. The ratio  $\frac{\text{Span}^2}{\text{Weight}}$  is no less than 1.84, so that the

induced drag is very small. Thus at the cruising speed of 65 m.p.h. the ratio of lift over induced drag is no less than 62.25, which gives an induced drag of only 16 lb., corresponding to a propeller horse-power of 2.87 only. The cruising speed, with the wing loading of 4.6 lb./sq. ft., corresponds to a lift coefficient of 0.2 about. It seems likely that the profile drag coefficient is not more than 0.005, which would give a profile drag at cruising speed of about 23 lb., or a total wing drag of 39 lb. This would correspond to a thrust horse-power of 6.8, or at 75 per cent. efficiency 9 h.p. The speed corresponding to minimum power required would probably be lower so that one may assume that the maximum power reserve is not likely to be less than 50 per cent. of the total, and is probably more.

It may be of interest to recall briefly the characteristics of the Beardmore "Wee Bee I" monoplane which won the *Daily Mail* light 'plane competition. The weight empty of that machine was more than 100 lb. less than that of the L.20, being 462 lb. The total loaded weight was 837 lb., and

the wing area 187 sq. ft. The ratio  $\frac{\text{span}^2}{\text{weight}}$  was very nearly the

same as that of the L.20. The wing loading of the two machines is also very nearly the same. The Bristol "Cherub" engine of the "Wee Bee" was of 1,100 c.c. capacity, but direct drive was used. Finally, it may be mentioned that the L.20 sells in Germany for 8,400 marks (about £420).

## LIGHT 'PLANE CLUBS

London Aeroplane Club, Stag Lane, Edgware. Sec., H. E. Perrin, 3, Clifford Street, London, W.1.

Bristol and Wessex Aeroplane Club, Yate, Gloucester. Sec., C. S. Clarke, Channel Road, Walton Park, Clevedon, Somerset.

Hampshire Aeroplane Club, Hamble, Southampton. Sec., Maj. Ross White, Hamble, Southampton.

Lancashire Aero Club, Woodford, Lancs. Sec., C. J. Wood, Oakfield, Dukinfield, near Manchester.

Midland Aero Club, Castle Bromwich, Birmingham. Sec., Maj. Gilbert Dennison, 22, Villa Road, Handsworth, Birmingham.

Newcastle-upon-Tyne Aero Club, Cramlington, Northumberland. Sec., A. H. Bell, c/o The Club.

Norfolk and Norwich Aero Club, Mousehold, Norwich. Sec., H. O. Bennett, 5, Opie Street, Norwich.

The Scottish Aero Club Movement, 101, St. Vincent Street, Glasgow. Sec.: Harry W. Smith.

Suffolk Aeroplane Club, Ipswich.—Secretary, Courtney N. Prentice, "Hazeldeil," Stowmarket, Suffolk.

Yorkshire Aeroplane Club, Sherburn-in-Elmet, Yorks. Sec., J. F. Barnes, 39, Swan Arcade, Bradford.

### LONDON AEROPLANE CLUB

The total flying time for the week ending 2nd inst. was 18 hrs. 55 mins. Flying was suspended Friday and Saturday owing to the R.A.F. Display rehearsals.

Pilot instructors: Capt. F. G. M. Sparks, Capt. S. L. F. St. Barbe. Dual Instruction:—A. B. Ferguson, H. J. Greenland, H. N. Marlow, L. Martin, C. H. Swan, G. Clemetson, F. C. Fisher, E. A. Lingard, L. Rowson, L. G. Sykes, Miss Fletcher, W. L. O'Connor, J. R. De Havilland, A. L.

Richardson, Col. O'Meara, Miss O'Brien, A. S. Mulder, Miss Spooner, J. H. Veasey, R. Drysdale Smith, H. M. Samuelson, Dr. Cooper.

Solo Flying:—Squad-Leader M. E. A. Wright, Major K. M. Beaumont, G. H. Craig, A. R. Ogston, W. Hay, C. H. Swan, N. Jones, J. C. Horton, K. V. Wright, L. M. S. Veal, M. L. Bramson, A. F. Wallace.

Passenger Flights:—Mrs. Wood Humphrey, S. O. Bradshaw, Miss Honan. German Light Aeroplane at Stag Lane:—On Sunday, at the invitation of the London Aeroplane Club, the Klemm-Daimler Light Aeroplane visited Stag Lane, from Croydon, and the Pilot, Lörzer, gave a most interesting demonstration of the capabilities of this machine.

## HAMPSHIRE AEROPLANE CLUB

REPORT for week ending July 3.—Total flying time, 18 hrs. 30 mins.; instruction flying, 8 hrs. 20 mins.; solo flying, 7 hrs. 50 mins.; joy rides, 50 mins.; test flights, 1 hr. 30 mins.

The following members had instruction:—T. F. Brewster, 1 hr. 30 mins.; A. L. Fortlage, 1 hr. 10 mins.; B. Whittle, 45 mins.; F. A. Kerry, 30 mins.; W. M. C. Wall, 30 mins.; Commander A. W. Hunt, 25 mins.; J. Dunning, 25 mins.; Captain H. T. Molyneux, 25 mins.; A. R. Mellor, 25 mins.; J. Everett, 25 mins.; E. T. Symmons, 20 mins.; E. A. L. Parker, 20 mins.; Miss M. M. Home, 20 mins.; L. Taylor, 20 mins.; W. P. Courtney, 15 mins.; and the Hon. H. R. Grosvenor, 15 mins.

The soloists were: E. T. Symmons, 5 hrs.; H. R. Grosvenor, 50 mins.; Don J. de la Cierva, 40 mins.; K. P. L. Bowen, 30 mins.; V. F. Nicholson, 15 mins.; E. I. C. Wyllie, 10 mins.; L. A. W. Deane, 10 mins.; Flight-Lieut. Kimmins, 10 mins.; and R. H. Cooper, 5 mins.

The joy riders were Lady Stalbridge, Major Ross White, Mr. Davis and Mr. Payne, with Captain Thomson, Mr. G. Green, and Mr. Stanford, with K. P. L. Bowen and Miss Price, with E. I. C. Wyllie.

By special request Captain Thomson flew over to Millbrook (with Major Ross White in the front seat) on Saturday, on the occasion of Millbrook Regatta, and he gave the spectators an exhibition of loops and half rolls. Meanwhile, Mr. E. T. Symmons arrived solo in our other Moth and cruised round above Captain Thomson. We understand that the Millbrook Yacht Club were very pleased that we were able to co-operate with them in this manner, and we feel with them that all sporting organisations should endeavour to join hands on occasions such as this.

## LANCASHIRE AERO CLUB

REPORT for week ending July 2.—Total flying time, 20 hrs. 10 mins., made up as follows:—

Dual with Mr. Brown:—Mr. Caldecott, 2 hrs.; Messrs. Allott and Shiers, 55 mins. each; Tweedale, Torres and Watson, 35 mins. each.; Rowley and Riley, 30 mins. each.; Ruddy, 25 mins.; Harber, Pattreux, Linaker and Miss Baerlein, 20 mins. each, Hartley, 10 mins.

Dual with Mr. Cantrill:—Mr. Nelson, 2 hrs.; Harber, 1 hr. 5 mins.; Rowley, 50 mins.; Anderson, 25 mins.; Petrieux, Goodyear and Ruddy, 20 mins. each.

Solo: Michelson, 1 hr. 15 mins.; Costa, 1 hr. 10 mins.; Twemlow and Ward, 1 hr. each; Hardy, 25 mins.; Lacayo, 20 mins.; Chapman, 10 mins.

Joy-ride:—With Mr. Brown.—Mr. Downshaw, 20 mins. Tests:—40 mins. "Manners—none, habits—beastly" is the best description of the weather, except on Saturday, when it seems to have been fine everywhere except at Hendon.

All the eclipse flights passed off successfully. G-EBLV gave trouble with a sticking rocker arm on the way back from Southport, but Mr. Brown managed to coax her back to Woodford on 3 cylinders.

G-EBMQ is back in service after her overhaul, looking very smart for a coat of paint.

Arrangements for the pageant on July 16 are well in hand, and with the kind co-operation of No. 5 F.T.S. of the Royal Air Force it is anticipated that there will not be a dull moment for the thousands who will be gathering to watch the progress of the Air League Challenge Cup race. The new club-house extensions will be formally opened by our president, Col. Sir Charles Wakefield, Bart., and the opening ceremony will be followed by a luncheon at which both Sir Charles Wakefield and Sir Sefton Brancker will be present.

## MIDLAND AERO CLUB LIMITED

REPORT for week ending July 7.—The total flying time was 12 hrs. 4 mins.

The following Members were given dual instruction:—J. Edwards, Capt. J. E. Brewin, R. D. Bednell, N. Crane, R. Cazalet, G. Aldridge, S. H. Smith.

Solo:—G. V. Perry, E. J. Brighton, R. D. Jackson, C. Fellowes, W. Swann, J. F. C. Brinton, S. H. Smith.

A week of the choicest midsummer rain and gales again restricted the hours flown.

Preparations are well advanced for the Birmingham Air Pageant, which will undoubtedly be a record one so far as the provinces are concerned. Particulars of the programme will be given in next week's issue of FLIGHT.

## NEWCASTLE-UPON-TYNE AERO CLUB

REPORT for week ending July 3, :—Total flying—37 hrs. 15 mins., LX 25.30, QV 8.25, PO (Avro) 3.30.

Dual, 11.10, "A" pilots 13.05, solo (training) 8.45, passenger flights with Mr. Parkinson, 40 mins.

The following members flew under instruction with Mr. Parkinson:—Mrs. Heslop, Messrs. Jewett, Lawson, D. Wilson, Pargeter and Elmes.

Solo (training) Mrs. Heslop, Messrs. Jewett, Bainbridge, D. Wilson, Elmes, Turnbull.

"A" pilots. Miss Leathart, Dr. H. B. L. Dixon, Mr. Hannay with Capt. Laws. Mr. Heppell with Mr. R. N. Thompson. Mr. R. N. Thompson with Mrs. White, Mrs. Thompson, Mr. J. Bell and Mr. Bulmer. Mr. Baxter Ellis. Mr. C. Thompson with Mrs. Heslop, Mr. Luckman. Mr. H. Ellis with Mr. N. Easey. Mr. N. S. Todd with Mr. Miller and Mr. Dees. Mr. Mathews with Mr. Percy.

Passengers with Mr. Parkinson, Capt. Law and Mr. White.

Mrs. Heslop and Mr. Jewett both carried out their first solo flights on Tuesday, and Mr. D. Wilson and Mr. Elmes were launched on Thursday, all making very good landings, which appear to be the most important part of first solos.

With Mr. Irving as passenger, Mr. Parkinson set out on Friday evening to fly to Stag Lane so as to visit the R.A.F. Pageant on Saturday, but were compelled to leave the machine (QV) at Spittlegate, owing to bad weather. It had been an unpleasant journey all the way but got worse near Grantham. The return flight was made on Sunday.

Mr. Parkinson carried as passengers two representatives of *The Northern Echo* newspaper (a reporter and photographer) to the Richmond area on Wednesday, in the Club's three-seater Avro. An excellent report of the Eclipse and photographs, published in the *Northern Echo* resulted.

## NORFOLK &amp; NORWICH AERO CLUB

REPORT for week ending July 3:—An informal opening meeting of the above club was held on June 27 last, at 6 p.m. and among those present were the following:—Marchioness Townshend, Marquis Townshend, Lady Elizabeth Townshend, General Sir Richard Ruck, K.C.B., The Lord Mayor (C. R. Bignold, Esq.), The Lady Mayoress (Mrs. C. R. Bignold), The Sheriff (D. A. Rice, Esq.), The Sheriff (Miss Rice), Mr. and Mrs. J. P. North, Captain Pike, Captain and Mrs. Ramsay, Mr. and Mrs. J. Morse, H. N. Holmes, Esq., P. Hardy, Esq., H. O. Bennett, Esq. (Hon. Sec.), Sqdn. Ldr. C. N. Rea.

One or two joy rides were given, but owing to inclement weather the proceedings were rather marred toward the end of an otherwise successful evening.

The club has now started flying in earnest and it is hoped to get one or two ex-service members solo in the course of a few days.

Total flying hours for the week, 11 hrs. 35 mins.

Dual with Mr. Lines:—Mr. H. Gough, Mr. C. White, Mr. A. Marshall, Mr. Whitlock, Mr. A. Rice, Mr. E. Scott, Mr. A. Potter, Mr. R. Moore, Mr. H. Mack, Mr. Harmer.

Joy rides:—Mrs. C. White, Mrs. Morse, Mrs. J. Morse, Mr. E. Scott, Mr. Gowing.

Solo:—Sqdn.-Ldr. Rea.

Owing to weather being unfit no flying took place on Saturday last.

## YORKSHIRE AEROPLANE CLUB

REPORT for the week ending July 2.—The total time for the week amounted to 23 hrs. 25 mins., consisting of 3 hrs. 5 mins. solo, 11 hrs. 45 mins. cross-country, 8 hrs. dual instruction, 25 mins. Joyride and 10 mins. test.

The following members received instruction:—Messrs. Coles, Brown, Wilson, Wall, Thomson, Brackenbury, Henry Leatham, Weaver, Crowther (A. & H.) R. K. Lax, Miss Wilson, and Capt. Milburn.

The soloists were:—Messrs. Coles, Mann, Wood, Clapham and Carter, Norway and Thomson; in addition, Messrs. Fielden and Dawson undertook cross-country flights in connection with the eclipse.

On Monday the Club was closed for the usual weekly holiday. On Tuesday and Wednesday Mr. Coles and Mr. Beck were up in London for their half-yearly Medical Board.

On Tuesday evening both our "Moth" NN and the Renault Avro left Sherburn for Catterick for their flight the next morning to view the eclipse. Mr. Dawson took a passenger in the "Moth" while Mr. Fielden took Dr. Routh of the Board of Education, who was highly delighted with his flight when he secured some excellent photographs of the Eclipse.

On Thursday no flying was possible until 4 p.m. on account of the heavy rain.

On Friday and Saturday both the "Moths" went up to London in order to attend the Royal Air Force Display at Hendon.

Mr. Beck flew "LS" with Capt. Milburn as passenger, while Mr. Fielden was in charge of "NN" with Mr. Brackenbury.

On Saturday afternoon Mr. Clapham took the Avro over to Post Hill, near Leeds, where he did some stunting. Our ground engineer, Mr. Beazer, also held the interest of the crowd by a daring display of wing-walking.

## COURTNEY'S ATLANTIC ATTEMPT

On Tuesday, June 28, Capt. F. T. Courtney brought his Dornier Wal with two Napier Lion engines from Friedrichshafen to Calshot. He had on board Mrs. Courtney, Flying-Officer F. W. M. Downer (navigator), and Mr. R. F. Little (engineer), several suit cases, and about 600 gallons of petrol. The seaplane is registered as a British aircraft and bears the letters G-EBQO, and the words "Dornier Napier Whale" are painted on the grey hull.

The boat took off from Lake Constance at 9.48 p.m. (G.M.T.) and followed the course of the Rhine. A port beam wind was blowing, and at Mannheim and elsewhere sharp hail storms were encountered. About Dusseldorf Capt. Courtney turned down the Maas to Rotterdam, encountering a head wind of some 25 knots. He kept his air speed indicator at 105 m.p.h. and at 6.20 was signalled off Brighton. He reached Calshot at 7 p.m., made an excellent landing and took up his moorings. The flight of 850 miles was thus accomplished in 9 hrs. 12 mins. Mrs. Courtney, who is probably the only woman who has endured such a long non-stop flight, confessed that she had been cold, but not excessively so, and had enjoyed the views of the very interesting country, over which they had flown.

Capt. Courtney intends to start shortly for New York in his Wal, and hopes to make a return flight also. The date of his departure is still uncertain, though July 7 has been mentioned as possible.

The wireless set is being installed in the seaplane at Calshot, and Capt. Courtney intends to make some trial flights, as he had only had the Wal up for two short trips before starting on his long flight to Calshot.

Mr. Downer is quite at home at Calshot, as he was recently stationed there before he left the service. He has a very high reputation as a navigator, and in the event of an alighting on the Atlantic (which may Napiers forbid) his seamanship will doubtless be invaluable. Mr. Little, an old Sedbergh boy, I believe, has had much experience as a ground engineer with flying companies.

It will be remembered that Commandante Franco used a Wal with Lion engines on his flight from Spain to Brazil. Signor Locatelli also used a Wal in his attempted flight across the North Atlantic in 1924. He met the American world fliers in Iceland and arranged to fly on with them, but the Wal was faster than the Douglas seaplanes and left them behind. Fog, not engine failure, forced Signor Locatelli down on the Atlantic in heavy weather. He damaged his engine bearers in alighting, and the waves then broke his ailerons and stabilisers. However, the Wal kept afloat and the pilot and his companion remained aboard it for three nights. Fortunately, for them, the American warships which were strung out along the route of Lowell Smith and Erik Nelson took up the search for Locatelli and the *Richmond* found and rescued him.

F. A. DE V.R.

# THE PRAGUE AERO SHOW

(Concluded from p. 394.)

In our previous reports we dealt with the exhibits of the two Czech Aircraft firms, Milos Bondy and Vojenska Aero, and this week we conclude with a brief résumé of the various machines exhibited by the Military Aircraft Works, or to give it its national name, Vojenska Tovarna "Letov," of Prague. This firm is one of the earliest of the Czecho-Slovak aircraft concerns and since its formation—shortly after the establishment of the Republic of Czechoslovakia in 1918—

lation and camera gear—is provided. A fixed Vickers gun firing forward and two Lewis guns on a gun ring at the rear comprise the armament.

The undercarriage is of the non-axle type, consisting of two separate steel-tube units giving a fairly wide track

The principal characteristics of the S-16 are:—

Span, 15.5 m. (50 ft. 9 in.); overall length, 9.2 m. (30 ft.); wing area, 47 sq. m. (506 sq. ft.); weight empty, 1,200 kg.



**THE PRAGUE AERO SHOW:** The Vojenska "Letov" S-16, a two-seater reconnaissance biplane of all metal construction.

has been responsible for the production of some 17 different types of aircraft, designed by M. Smolik.

At the Prague Exhibition there were three types on view, the S-16, S-18, and S-20—of which the first two should be familiar to some of our readers since they were exhibited at the last Paris Aero Show, and to which reference was made in *FLIGHT* at the time.

The S-16 is a two-seater reconnaissance biplane of all-metal construction. The wings, which are noteworthy for their comparatively high aspect ratio, are built up of duralumin box spars with U-section ribs of the same material, and have single bay bracing, upper and lower planes being of equal span. The tail surfaces are also of similar construction.

The fuselage, which is of deep rectangular cross-section, is of steel tube construction, with detachable engine mounting. This latter feature not only provides for the easy removal of the engine—the 450 h.p. Lorraine Dietrich being fitted as standard—but also allows other makes of engine, of similar type, to be installed when required. The pilot's and observer's cockpits are arranged in tandem, behind the main planes, and a complete up-to-date equipment—including wireless instal-

(2,640 lbs.); total weight, 2,250 kg. (4,940 lbs.); wing loading, 47.9 kg./sq.m. (9.77 lbs./sq. ft.); power loading, 5 kg./h.p. (11 lbs./h.p.); speed, 230 k.p.h. (142.6 m.p.h.); climb to 5,000 m. (16,400 ft.), 32 min.; ceiling, 6,500 m. (21,300 ft.); range, 5½ hrs.

The S-18 is a comparatively small tractor-fuselage biplane of all-wood construction. It is intended for training purposes, being, therefore, provided with dual control, and is fitted with a 60 h.p. Walter engine; the 85 h.p. and 110 h.p. Walter engines can also be fitted if desired.

It is of more or less conventional design, except, perhaps, that the central wing bracing (strut) is somewhat unusual. As may be seen from our illustration, the top plane centre section is supported by a pair of V-interplane struts—extending upwards from the lower front spar attachment—as well as by the usual N-strut cabane on the top of the fuselage. Being a single bay biplane the only other strut bracing consists of one pair of N-struts each side.

This type is employed in the Czechoslovakian and Bulgarian Air Services, and its principal characteristics are:—

Span, 10 m. (32 ft. 9 in.); overall length, 6.9 m. (22 ft.



**THE PRAGUE AERO SHOW:** The Vojenska "Letov" S-18, a training biplane of wood construction fitted with a 60 h.p. Walter engine.



**THE PRAGUE AERO SHOW: The Vojenska "Letov" S-20. This is a single-seater fighter, fitted with a 300 h.p. Hispano-Suiza engine.**

6 in.); wing area, 17 sq. m. (183 sq. ft.); weight empty, 354 kg. (780 lbs.); total weight, 554 kg. (1,216 lbs.) wing loading, 32.6 kg./sq. m. (6.64 lbs./sq. ft.); power loading, 9.24 kg./h.p. (20.3 lbs./h.p.); speed range 40—140 k.p.h. (25—87 m.p.h.); climb to 1,000 m. (3,280 ft.), 6 min.; ceiling, 3,500 m. (11,500 ft.).

The S-20 is a single-seater fighter of clean design, fitted with a 300 h.p. Hispano-Suiza engine, or other similar types up to 450 h.p.

It is of mixed construction, that is, the wings are of wood with box spars and plywood ribs, the ailerons of steel and Duralumin, and the fuselage of steel tube. Very little welding is employed in this machine.

The wings are of the single bay type, with N-strut and streamline wire bracing, the top plane having slightly larger dimensions than the lower one, to which are fitted the ailerons. They are covered with plywood from leading edge to rear spar.

The fuselage is of good streamline form, and is fabric covered, except for the engine section, where aluminium is used. The pilot's cockpit is behind the planes, and the range of vision provided is good. Two fixed Vickers' guns, firing forward, are fitted.

A conventional V-strut undercarriage is employed, and the engine-cooling radiators are mounted on the front chassis struts.

As well as being used in the Czechoslovak Air Service, the S-20 has also been supplied to the Lithuanian Government.

The principal characteristics of the S-20 are:—

Span, 9.6 m. (31 ft. 6 in.); overall length, 7 m. (23 ft.); wing area, 18.4 sq. m. (178 sq. ft.); weight empty, 740 kg. (1,631.7 lbs.); total weight, 1,050 kg. (2,315.2 lbs.); wing loading, 57 kg./sq. m. (11.6 lb./sq. ft.); power loading, 3.4 kg./h.p. (7.5 lb./h.p.); speed, 250 k.p.h. (155 m.p.h.); climb to 5,000 m. (16,400 ft.), 13½ min.; ceiling, 7,200 m. (23,600 ft.); range, 2 hrs.

## COMMANDER BYRD'S ATLANTIC FLIGHT

COMMANDER BYRD'S machine, "America," has added yet another crossing of the Atlantic to the history of aviation. This latest effort has its particular value, perhaps, in that the feat was accomplished with a comparatively large personnel and an extensive equipment, thereby giving a glimpse of what may be possible in the future in regard to a regular Atlantic air service. Another lesson that it has taught us is the apparent futility at the present of forecasting the weather over such a vast stretch of ocean like the Atlantic for an extended period. After weeks of delay Commander Byrd eventually had to cross against unfavourable conditions.

The "America" is a Fokker monoplane fitted with three Wright "Whirlwind" engines of 200-h.p. each. Commander Byrd's companions were Mr. Bert Acosta, Lieut. Noville and Lieut. Balchen. They carried sufficient emergency rations for 30 days as well as food for the voyage. The start was made at dawn from Roosevelt Field, Long Island, where all the recent American Atlantic flights have commenced. In the first stages of the flight a fair altitude was maintained, and it was found that the heavily-loaded machine climbed well. When travelling along the coast fair weather was met with up to Newfoundland. Wireless communication was constantly maintained with the land at this period, and Commander Byrd reported at one time that the extra petrol tins were interfering with the compass action but he expressed the hope that when they were able to throw them overboard after they had been emptied, this trouble would be abated. Then later he asked stations to stand by whilst he was engaged in filling the main petrol tank with the auxiliary supply carried in the five-gallon tins. It was apparently necessary to discontinue wireless transmitting whilst this operation was going on for fear of an explosion.

After leaving Newfoundland, the "America" ran into fog, and for 19 hours the crew lost sight of sea and sky. During these anxious hours they were fortunately able to communicate by wireless with ships. Once, at an altitude of 10,000 ft., water began to drip into the cabin from the dense fog which at times seemed to stretch below or around them like vast, eerie caverns. In the day the sun was only

glimpsed occasionally and, as in Lindbergh's flight, so dense was the fog at stages that the wing-tips were obscured. The S.S. "Ulgaland" was heard by wireless in the Atlantic, who told them that their own signals were strong and that they must be quite near. Both ship and aeroplane were hidden in fog. A bearing was taken from the ship and a little later the S.S. "Paris" was heard, who also reported that the machine's signals were very strong, and also gave them a bearing which verified calculations. However, although ships were heard none was sighted until the approach to land.

The first place sighted was Cape Finisterre. At this juncture everybody began to transmit wireless messages to the "America." A course was set for Paris but very soon darkness fell, rain came down, and the weather was again very thick, until eventually the lighted towns could not be seen to guide them on their way. To make matters worse their compass had failed them! When certain bright beacons were seen ahead later they were thought to be shining from Paris, and a wireless report to that effect was sent to Mr. Wanamaker, who financed the flight. When the beacons were reached, however, they proved to be shining from a fair near the water, and a new course had to be set for Paris. But they failed to reach their goal, and their subsequent progress over France is very doubtful as to where it led them. The weather was very adverse, and it is probable that if they did actually pass near Paris the Le Bourget beacon could not be seen.

It became obvious that a landing in the sea was the best plan, for the petrol was giving out, and a landing in the dark on strange territory was far too dangerous to themselves and others to attempt. Consequently they retraced their course and searched for the sea, preparing for any mishap that seemed inevitable even by landing in the sea. Eventually they came down about 2.30 a.m. towards the third dawn of their flight, just off the coast of Ver-sur-Mer, a little village between Cherbourg and Le Havre, on the northern coast of France. The landing was a minor crash. When the Fokker first hit the water the chassis was whipped off,

then the fuselage hit with a thud which gave the crew a bad shaking, pitching Commander Byrd out of the cabin and into the water. The fuselage filled with water and some concern was felt regarding Acosta, who failed to appear for some time.

Luckily the descent had happened near the shore, and in their pneumatic raft, carried in the machine for the voyage, they reached the beach, though in a very exhausted condition. Their adventure on that part of the French coast made history for the little village of Ver-sur-Mer, whose inhabitants

were the first to receive the Americans and extend to them every hospitality from France.

Statistics for the flight are uncertain at the moment. It would seem that the "America" was flying for over 40 hours and covered over 4,000 miles, taking into account the six hours or so wandering round France. It was obviously one of the most adventurous of flights from beginning to end. Commander Byrd has been recommended for the American Distinguished Flying Cross.



### General Balbo's Visit

GENERAL ITALO BALBO, Italian Under-Secretary of State for Air, was the guest of the Air Council at a luncheon held at Claridge's Hotel on July 4. Sir Samuel Hoare presided, and in his speech he said that they honoured General Balbo not only as a Cabinet Minister of a great Power, but as a pilot. Mussolini had given the greatest stimulus to aviation, and the Italian Air Force had been organised on lines similar to those in England. In replying, General Balbo, who witnessed the Hendon pageant last Saturday, paid great tribute to our skill and courage, which he, as a pilot, considered to be a unique example to the whole world. It was a perfect Air Force. He also said that in bestowing the Air Force Cross on Colonel de Pinedo, Britain had honoured their young air force, and more so as the honour came from a nation who could boast such pilots as Alcock, Smith, Cobham, and Carr.

### Lindbergh in Canada

COLONEL LINDBERGH visited Ottawa by air on July 2, during the Canadian Jubilee celebrations, flying his Atlantic machine, the "Spirit of St. Louis." He was escorted by twelve U.S. Army machines, one of which crashed through a collision in mid-air with another machine in the formation, and the pilot, Lieut. Johnston, was killed. Colonel Lindbergh left Ottawa again on July 4 for New York, being enthusiastically cheered by thousands of people.

### London-London Flight

THE immediate objective of aviation in many countries is a flight across the Atlantic. Canada is making determined efforts to bridge their country with England. Carlings Breweries, Ltd., have offered £5,000 towards a flight between London, Ontario, and London, England, and thirty-two Canadian pilots have offered their services. The best machine available will be obtained for the chosen pilot, and it is understood that it may be a British machine.

### A British Atlantic Attempt

It seems now that the plans of Lt.-Col. Minchin and Capt. R. H. McIntosh, both of Imperial Airways, for crossing the Atlantic will be in co-operation with Mr. Leslie Hamilton, the private-owner, who is quite an air rover. During the summer he roves about the pleasure resorts on the Continent in his Vickers amphibian, starting local air services wherever he thinks they are required. He has been very successful, too.

### Amsterdam-Batavia Flight Ended

MR. VAN LEAR BLACK completed his flight from Amsterdam to Batavia on June 30. He has travelled 10,000 miles in 16 days, on three of which no flying was possible. His flying hours totalled 86. Large crowds gathered at Batavia to welcome him in his Fokker monoplane, which was piloted by M. Geysendorffer. The return flight to Amsterdam will probably start in a week's time.

### Round Australia Flight Success

THE attempt of the Australian airmen to circle Australia by air in an old Bristol biplane within eleven days has been successful. Capt. Kingsford Smith and Mr. Ulm reached Mascot aerodrome, Sydney, on June 29, ten days and five hours after the start. Their machine was eight years old and the engine, a 240-h.p. Siddeley "Puma," eleven years old.

They were entertained to lunch by the Sydney "Sun" newspaper on June 30, and Capt. Smith said that he was anxious to fly from America to Australia, but the expense of over £6,000 was beyond his company. Efforts are being made to raise the necessary funds.

### San Francisco-Honolulu Flight

THE flight between San Francisco and Honolulu, a sea distance of 2,400 miles, to which we referred last week, was accomplished by Lieut. Maitland and Lieut. Hegenberger in a three-engined Fokker machine on June 29. They covered the distance in 25 hrs. 43 mins., and it constitutes a record for a non-stop sea flight. Mr. Richard Grace, another competitor, set off to emulate them on July 4 but was forced to return soon after and his machine was badly damaged on landing.

### Scarborough Air Pageant Cancelled

THE Scarborough Corporation announce that owing to unforeseen circumstances it has been necessary to cancel the Air Pageant arranged to be held on Saturday, July 9.

### A New Fokker Machine

RECENT great flights have been a triumph for M. Anthony Fokker's machines and the Wright engines. He is now said to be building a new machine which will have a non-stop range of 72 hours, therefore being capable of a non-stop flight from, say, Seattle, America, to Tokyo. It will be driven by a new engine that Wrights are bringing out, which will be 270 h.p. and have a petrol consumption of 10 to 15 per cent. less than the present 220 h.p. type, whilst weighing only a little more.

### The Parachute Aids Research

It is only the parachute that has made possible certain very dangerous air tests like testing the strength of the structure under various loads imposed by different manoeuvres. On June 30, a Fokker monoplane was undergoing such tests at Copenhagen in an effort to discover the cause of a Fokker machine recently collapsing in mid-air. Flight-Lieut. Bjarkow dived it from 9,000 ft. and eventually the wings splintered and the machine crashed. The pilot managed to get clear and descend by parachute.

### Civil Flying in India

THE first flying lesson in an aero club in India was given in Karachi recently when Mr. Alan Duguid, Honorary Secretary of the Air League of India, was given half an hour's dual instruction by Mr. Bernard Leete in his De Havilland Moth, "Gold Flake." Mr. Leete is shortly to visit England to purchase machines for a civil air service in India. The class of aeroplane to be purchased has not yet been decided upon, but it will be a high-powered single-engined type suitable for carrying passengers and freight. It is proposed at first to start services from Karachi to Bombay, from Delhi to Lahore, and perhaps from Rawalpindi to Srinagar. For longer routes, as from Bombay to Calcutta, and from Karachi to Calcutta, it would be essential to have multi-engined aeroplanes and night flying would be necessary, but it has been decided to concentrate at first on short-distance routes and later to embark on a more extensive scheme. Mr. Leete is a member of the Aerial Advertising Travel and Survey Company, which is in the process of formation.

# THE ROYAL AIR FORCE

London Gazette, June 28, 1927.

## General Duties Branch

Flight Lt. V. P. Feather is granted a permanent commn., with effect from June 1; Flying Offr. F.F. Inglis is placed on half pay, Scale B, July 5 to 31, 1927, inclusive; H. F. Baker, Lt. (E.) R.N., Flying Offr., R.A.F., relinquishes his temporary commn. on being placed on retired list of the R.N. on account of medical unfitness (May 28).

## Reserve of Air Force Officers

### General Duties Branch

The follg. are granted commns. as Pilot Offrs. on probation:—Class A.A.—R. Anderson, J. M. Greenwood, J. A. C. Northway (June 13). Class B.B.—R. Bance, A.F.M. (June 28).

Pilot Offr. on probation M. T. Bromley is confirmed in rank (April 12):

## ROYAL AIR FORCE INTELLIGENCE

**Appointments.**—The following appointments in the Royal Air Force are notified:—

### General Duties Branch

**Squadron Leaders:** A. S. Morris, O.B.E., to H.Q., Egypt; 9.6.27. R. P. Willock, to Air Ministry, Deputy Directorate of Organisation; 1.7.27.

**Flight-Lieutenants:** C. E. Williamson-Jones, D.F.C., to R.A.F. Depot, Uxbridge; 17.6.27. H. H. Down, A.F.C., to R.A.F. Base, Gosport; 20.6.27. F. H. D. Henwood, D.F.C., to R.A.F. Depot, Uxbridge; 3.6.27. A. H. Orlebar, A.F.C., to R.A.F. Depot, Uxbridge; 21.6.27.

**Flying Officers:** J. E. Davies, to No. 45 Sqdn., Egypt; 1.6.27. W. Dickison, D.S.M., and C. G. C. Woledge, to R.A.F. Base and Stores Depot, Iraq;

Flying Offr. R. G. R. Godby is transferred from Class C to Class A (April 14).

The follg. relinquish their commns. on completion of service:—Flying Offr. J. Robertson (June 9); Flight Lt. G. H. Hooper (June 13); Flying Offr. C. H. Boreham, Flying Offr. J. Piggott, Flying Offr. F. S. Stokes (June 17); Flying Offr. E. F. Haselden (June 24); Flight Lt. R. H. Smyth, M.C. (June 25). Flight Lt. T. J. West, M.C., relinquishes his commn. on account of ill-health and is permitted to retain his rank (May 26); Flying Offr. J. A. Middleton, M.C., relinquishes his commn. on account of ill-health, and is granted the rank of Flight Lt. (June 29).

The commns. of the follg. Pilot Offrs. on probation are terminated on cessation of duty:—C. W. Harvey (May 27); E. J. Davis (June 10).

### Princess Mary's R.A.F. Nursing Service

The follg. Staff Nurses are promoted to the rank of Sister:—Miss A. M. Herd (June 3); Miss L. B. Cartledge (June 13).

17.6.27. T. H. Moon, to Marine Aircraft Experimental Establt., Felixstowe; 22.6.27. J. H. C. Wake, to Aeroplane and Armament Experimental Establt., Martlesham Heath; 25.6.27. C. J. Veevers, to No. 28 Sqdn., India; 26.5.27.

### Stores Branch

**Flight-Lieutenant:** R. G. Gore, to No. 14 Sqdn., Palestine; 7.6.27.

**Flying Officer:** H. O. Fellowes, to R.A.F. Base and Stores Depot, Iraq; 17.6.27.

### Accountant Branch

**Flight-Lieutenant:** R. H. Cleverly, to R.A.F. Base and Stores Depot, Iraq; 17.6.27.

## HALF-YEARLY PROMOTIONS LIST

THE Air Ministry announces:—

The undermentioned are promoted, with effect from July 1, 1927:—

### General Duties Branch

**Wing Commander to be Group Captain:** Arthur Vere Bettington, C.M.G. **Squadron Leaders to be Wing Commanders:** Richard Hallam Peck, O.B.E.; William James Yule Guilfoyle, O.B.E., M.C.; John Sowrey, A.F.C.; Frederick William Stent, M.C.; Horace Gordon-Dean, A.F.C.; Roger Martin Field; Arthur Travers Harris, A.F.C.; Edward Roux Littledale Corballis, D.S.O., O.B.E.

**Flight-Lieutenants to be Squadron Leaders:** Philip George Scott; Charles Edward William Foster; Seaward Newnham Cole; Frank Fernihough, M.C.; Malcolm Lincoln Taylor, A.F.C.; Henry Guy Rivers Malet; John Hugh Oscar Jones; Harold Alfred Whistler, D.S.O., D.F.C.; -Matthew Brown Frew, D.S.O., M.C., A.F.C.; Clair St. Noble; Hugh Mitchell Kirkwood Brown; Arthur Stanley Gould Lee, M.C.; Robert Little Stevenson, M.B.E.; Thomas Frederick Wailes Thompson, D.F.C.; John Patrick Coleman, A.F.C.; Grahame George Dawson; Edward Garden Hopcraft, D.S.C.

**Flying Officers to be Flight Lieutenants:** Frederick William Walby Wilson; Leonard de Ville Chisman; Joseph Henry Hargroves; Robert Samuel Bruce, M.B.E.; Edwin Jocelyn Foulkes-Jones; Edwin Seymour Steddy; Cuthbert Caumont Bazell; Ernest Shakespeare Borthwick-Clarke; Francis Stanley Wainscot; Henry James Brown; Alfred Percival White; Christopher Oswald Towler, D.S.M.; Robert Menzies; John Bradbury; Wilfred Eric Dipple; Harold Everett Falkner; Frederick Talbot Eades, D.F.C.; Joseph Sylvester Nichol; Gerald Paul Halliley Carter; Cecil Walker; Stanley James Smetham; Jack Glover; Findlay Willard Sinclair, D.F.C.; Ralph Eric Herbert Allen; Hubert John Adkins; Vivian Rees; William Edward James; Gerald Brooks; Albert George Thackray; Frank Jezzard, M.B.E.; Eric Delano Barnes; Sidney Norman Webster, A.F.C.; Allan Hesketh, D.F.C.; Arthur Edward Beilby; Noel Vivian Moreton; Robert William Ferguson Dunning; George Ewart Newton; Archibald Hugh Herbert Macdonald; Reginald William Hill; Alan Thomas Kingston Shipwright, D.F.C.; Harry Redvers McLaren Reid, D.F.C.; Francis Frederic Inglis; Michael Walter Crang Ridgway; Thomas Howell French, D.F.C.; Oswald Ewart Worsley; Edward Fowles Haylock; Talbot Baines Bruce, M.C.; Leslie Gordon Nixon; James Lionel Airey, D.F.C.; Henry Norman Thornton; Francis William Long; Gordon Herbert Vasse; James Donald Innes Hardman, D.F.C.; John Marsden; Guy George Housemayne Du Boulay; Colin Winterbotham Weldon; Geoffrey Roger Cole Spencer; Herbert Geoffrey Brookman; Maurice Hibbert Ely; Robert Linton Ragg; John Nelson

Boothman; Thomas William Stephen Brown; Basil Edward Embry, A.F.C.; George Alfred Hadley; Arthur Derrick Huthersoll Foster; Frank Arthur Swoffer, M.B.E.; Frederick Edward Vernon; Francis Caldwell Marsh; John Barker Hereward Rogers; Edgar Arnott Hodgson.

**Flying Officer (Hon. Flight-Lieutenant) to be Flight-Lieutenant:** Ian Eustace Brodie.

**Lieutenants R.N., Flying Officers, R.A.F., to be Flight-Lieutenants:** Edward John Shirley Knocker; Stephen Richardson; Edmund Walter Anstee; Charles James Norman Atkinson; Anthony Martin Kimmins.

### Stores Branch

**Squadron Leaders to be Wing Commanders:** Wallace John Shields; George Arthur Hilliar.

**Flight-Lieutenants to be Squadron Leaders:** Henry Sam Francis Temple Jerrard; John Walker; Archibald James Briddon; Arthur William Smith; Arthur William Turner, D.C.M.; Charles Marsden Bevan.

**Flying Officers to be Flight-Lieutenants:** Stanley David Dennis; Francis Arthur Skoulding; Archibald Pharoah Woollett; Albert Thomas Wells; Albert Walters; Edwin Ivan Thomas Duffield; Alfred Sidney Berry; Claud Arthur Longhurst; Samuel Bingham; Leonard Nathan Sargent; Herbert Arthur Williams; Reginald Wyndham Stewart; Thomas Henry Jolley; Ernest Standford Bullen, M.B.E.

### Accountant Branch

**Flying Officers to be Flight-Lieutenants:** Ernest Walter Horncastle; Geoffrey William Lynn; Vyvian George Anthony Bennet; Richard Edward Barrett.

### Medical Branch

**Wing Commanders to be Group Captains:** Albert Victor John Richardson, O.B.E., M.B., D.P.H.; John McIntyre M.C., M.B., M.A.

**Squadron Leader to be Wing Commander:** Harry Aitken Hewat, M.B., D.T.M., & H.

**Flight-Lieutenant to be Squadron Leader:** Philip Clermont Livingstone, B.A., F.R.C.S. (E.), D.P.H., D.O.M.S.

**Flight-Lieutenant to be Honorary Squadron Leader:** Frederick Joshua Page Saunders, B.A.

### Princess Mary's Royal Air Force Nursing Service.

**Acting Senior Sister to be Senior Sister:**—Miss Winifred Eveline Molesworth.

**Sister to be Acting Senior Sister:**—Miss Bessie Cowie Simpson Forsyth.

## IN PARLIAMENT

### Khyber Pass and Tribal Unrest

SIR ROBERT THOMAS, on June 27, asked the Under-Secretary of State for India whether he has any statement to make regarding the unrest in the Khyber Pass district?

EARL WINTERTON: The only tribal unrest in the neighbourhood of the Khyber Pass calling for any special notice recently has been in the Mohmand country, where early in June a force of hostile Mohmands attacked clans friendly to Government and threatened an incursion into British India. The Government of India took defensive measures in the shape of bombing operations, which were entirely successful in dispersing the hostile tribesmen, and it was reported a day or two later that the situation was now practically normal. No importance other than local is attached to the disturbances.

### Crown Colonies and Commercial Aviation

MR. HAYDAY asked the Secretary of State for the Colonies what concession has been granted to private companies to operate commercial aircraft in the Crown Colonies?

MR. ORMSBY-GORE: No private company has at present any concession for operating commercial aircraft in any non-self-governing Colony.

### China: British Forces

LIEUT.-COMMANDER KENWORTHY, on June 28, asked the Secretary of State for Air where the air units and machines and pilots that have been sent to China were drawn from; and whether steps are being taken, or have been taken, to replace them?

The Secretary of State for Air (Sir Samuel Hoare): As regards the first part of the question the Fleet Air Arm units were drawn from home waters

and from the Mediterranean; No. 2 Squadron, Royal Air Force, from Manston; and additional Army co-operation observers from Farnborough. The answer to the second part of the question is in the negative.

LIEUT.-COMMANDER KENWORTHY: In view of the long stay of the expeditionary force in China, will not steps be taken to replace these units?

SIR S. HOARE: It depends on the time which they are required to stay there. Obviously that is a question which must be taken into account.

LIEUT.-COMMANDER KENWORTHY: In the meantime, for example, are the Fleet to be deprived of specially-trained pilots for Fleet purposes?

SIR S. HOARE: No, Sir.

LIEUT.-COMMANDER KENWORTHY: How are you going to replace them?

MR. THURTELL: Is the right hon. gentleman aware that a reply given by the Secretary of State for War indicates that the Shanghai Force is likely to be kept there for at least twelve months.

### Mooring Masts, South Africa

COLONEL DAY, on June 29, asked the Secretary of State for Air whether the Government of the Union of South Africa have placed with the Air Ministry a contract for material for the erection of a standard mooring mast in South Africa for the use of the new Empire airships; what is the total cost of such material; and will the whole cost of this be defrayed by the South African Government?

SIR PHILIP SASSOON: As regards the first two parts of the question, the Government of the Union of South Africa have requested the Air Ministry to place on their behalf a contract for a mooring mast base in that country, but the details have not yet been settled. The actual expense that will be involved cannot, therefore, be definitely stated. The answer to the last part of the question is in the affirmative.

## Auxiliary Air Force Flying Officers

LIEUT.-COMMANDER KENWORTHY asked the age limits for qualified pilots joining the Auxiliary Air Force.

Sir P. Sassoon: The minimum age limit for appointment to a commission in the Auxiliary Air Force for flying duties is 18 years. The maximum age limits for appointment are as follows:—Pilot or Flying Officer, 25 years; Flight-Lieutenant, 30 years; Squadron Leader, 35 years; Wing Commander, 40 years. The Air Council have discretionary power to give special consideration to the application of any candidate who is over the age limit but who is otherwise suitable.

## Hendon Display

MR. RENNIE SMITH asked the Secretary of State for Air if he can furnish particulars of the forthcoming air display at Hendon?

Sir P. Sassoon: The display, as in previous years, will be fully representative of the different aspects of the work of the Royal Air Force, and will afford the public an opportunity of witnessing the progress made in both civil and military aeronautics. Particulars of the more important events have appeared in the Press and in numerous advertisements and posters.

Colonel Gretton: Can the Under-Secretary say whether this display will entail any cost on the Exchequer?

Sir P. Sassoon: No, certainly not.

Mr. Rennie Smith asked the Secretary of State for Air if he can give the names of the education authorities and other bodies which have been invited to send children to witness the air display at Hendon; what has been the response; and how many children are likely to attend?

Sir P. Sassoon: As regards the first part of the question, 73 invitations to the Royal Air Force display rehearsal on July 1 have been issued to education committees in the Metropolitan area and the Home Counties. Invitations have also been issued to Boy Scouts, Girl Guides and Church Lads' Brigades. I do not think that a list of the committees and bodies to whom the invitations have been sent would serve any useful purpose. As regards the remaining parts of the question, 50 invitations have been accepted up to the present, but I cannot give an estimate of the number of children who are likely to attend.

Miss Wilkinson asked whether the Under-Secretary considers that these displays are suitable for young children to witness?

Sir P. Sassoon: Certainly.

Mr. Thurtle: Is the hon. Baronet aware that all these children in their schools are taught the Sermon on the Mount? Does he not think that there is some contradiction between the doctrine of the Sermon on the Mount and this particular display at Hendon?

Sir H. Brittain: Is it not a great deal better for them to witness British pluck in the air than to pay a visit to Soviet Russia?

Mr. Ponsonby: Will the hon. Baronet state whether the display will include a demonstration of the effects of poison gas?

Viscountess Astor: The display is not only for military purposes, surely? Is it not true that aviation may become a great commercial asset to this country, and that this display is not of value only for war purposes?

## BRITISH AIR MAILS

THE Postmaster-General announces that a new edition of the Air Mail Leaflet (June, 1927), embodying particulars of certain changes in the Air Mails, has been issued. After to-day a copy may be obtained free on application at any Head or Branch Office, or from the Secretary (Air Mails) General Post Office, London, E.C.1.

The Air Mail despatches and fees, and the advantages offered for letters to each country served, are now shown in the Leaflet against the name of the country. An indication of the chief changes—which will come into effect on Monday next, the 27th instant—is given below.

**Letter Air Mails.**—(1) Resumption of the use of the London-Lyons-Marseilles (and Geneva) air route, giving advantage for letters for the South of France, and on Fridays an opportunity of overtaking at Marseilles (or Toulon) the Mails despatched from London by ordinary service the previous evening for Egypt, India, Iraq, Australia, East Africa, etc. Advantage for letters for Egypt and the neighbouring countries is also given by this route on Mondays. For air transmission from London to Marseilles the fee payable will be 3d. per oz. in all cases, as shown in the Leaflet.

(2) Reduction of the fee payable on correspondence for Germany and Switzerland from 3d. to 2d. per oz. Connection by morning Air Mail from London with the German air lines serving many of the larger cities in Germany.

(3) Additional afternoon despatch to be closed at the General Post Office, London, at 12.30 p.m. (at the counter), giving advantage for letters to Belgium, many parts of Germany, Danzig and Memel.

(4) Additional afternoon despatch to Holland, to be closed at the General Post Office, London, at 2.30 p.m. (at the counter), giving delivery the same evening in Rotterdam and in most of Holland by first post next day.

**Parcel Air Mails.**—(1) New services to Belgium and in Colombia (South America); (2) admission of parcels weighing from 11 lb. to 22 lb. each in the air parcel services to Paris; (3) admission of insured parcels in the service to Switzerland.

## AIR MINISTRY NOTICES TO AIRMEN

**Procedure for Aircraft Reporting their Passage across the Irish Sea.**  
1. PILOTS of aircraft proceeding to the Irish Free State from this country are advised that the following arrangements have been made for reporting their passage across the Irish Sea between Holyhead and Baldonnell Aerodrome.

(i) The Holyhead Meteorological Station to be notified by telegram of (a) the proposed time of crossing of any aircraft; (b) the type of machine and the registration marking; and (c) the names of the crew and passengers. Telegraphic address:—"Meteorological Office, Holyhead." Telephone number:—Holyhead 30.

(ii) Aircraft to circle over the Meteorological Station, Holyhead, before crossing the coast.

The Meteorological Station is situated on Salt Island to the immediate N.E. of Holyhead town.

(iii) The Holyhead Meteorological Station to notify, by telephone or telegram, the Commandant, Army Air Service, Irish Free State, Baldonnell Aerodrome, of the time of the aircraft's passage over Holyhead. "Priority" message.

(iv) A similar notification to be made to "C.A.T.O., Aerodrome Croydon 2720."

(v) The Meteorological Station, Holyhead, to observe the true course made good by the aircraft as long as possible.

(vi) Baldonnell to notify the time of arrival of aircraft to the Meteorological Station, Holyhead, who will then inform "C.A.T.O. Aerodrome Croydon 2720." "Priority" message.

(vii) In the event of the non-arrival of an aircraft after one hour has elapsed from the departure time from Holyhead:

(a) Baldonnell to notify Seaforth W/T Station (Tel. No.: Waterloo 245; Telegraphic Address: "Seaforth Radio"), the Meteorological Station, Holyhead, and the Department of Industry and Commerce, Transport and Marine Branch, Dublin. "Priority" messages.

(b) Meteorological Station, Holyhead, to notify Seaforth W/T Station of any information available as to the course made good by the aircraft; they will also notify "C.A.T.O. Aerodrome Croydon 2720" of all the facts. "Priority" messages.

(c) Seaforth W/T Station to broadcast shipping giving all details available.  
2. In the case of aircraft returning from the Irish Free State, a similar procedure to be carried out in the reverse direction, viz.:—

(i)—(a) The proposed time of crossing of any aircraft; (b) the type of machine and the registration marking; (c) the names of the crew and passengers; and (d) the destination, to be notified to the Commandant, Army Air Service, Irish Free State, Baldonnell Aerodrome, who will then advise the Holyhead Meteorological Station accordingly. "Priority" messages.

(ii) The Meteorological Station, Holyhead, to notify in turn the "C.A.T.O. Aerodrome Croydon 2720." "Priority" message.

(iii) Aircraft to circle over the Meteorological Station, Holyhead, after crossing the Irish Sea.

(iv) The Holyhead Meteorological Station to notify by telephone or telegram, the Commandant, Army Air Service, Irish Free State, Baldonnell Aerodrome, of the time of the aircraft's passage over Holyhead. "Priority" message.

(v) A similar notification to be made to "C.A.T.O. Aerodrome Croydon 2720."

(vi) In the event of the non-arrival of an aircraft after one hour has elapsed from the departure time from Baldonnell:—

(a) The Holyhead Meteorological Station to notify Seaforth W/T Station, the Commandant, Army Air Service, Irish Free State, Baldonnell Aerodrome and the "C.A.T.O. Aerodrome Croydon 2720," of all the facts. Baldonnell Aerodrome will notify in addition the Department of Industry and Commerce, Transport and Marine Branch, Dublin. "Priority" messages.

(b) Seaforth W/T Station to broadcast shipping, giving all details available.  
3. Signals should be sent "Priority" as indicated in the above paragraphs. Priority facilities can be obtained by marking the telegram with the word "Important" as the first word in the "Address To," and inserting the word "Priority" in the space allotted for "Service Instructions."

4. In order to obviate any unnecessary signals and expense it is of particular importance that pilots taking advantage of this system should ensure that upon landing at Baldonnell on the outward journey or at a British aerodrome on the inward journey an arrival signal is immediately despatched to Holyhead.

5. This procedure is applicable for all flights in either direction between Holyhead and Baldonnell irrespective of what the British aerodrome of initial departure or final destination may be.

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## Air Gunnery and Bombing Range, Tents Muir, Fifeshire

It is notified that air gunnery and bombing practice, which takes place within the area and during the periods stated below, constitute a danger to aircraft except when flying above the minimum safety height.

No liability for accidents arising to aircraft from the use of this range will be admitted.

No special warning signals for aircraft will be displayed, but the usual flag signals will be employed at certain points whenever practice is in progress.

**Description and Position.**—An irregular-shaped area, dimensions approximately 5,000 yards by 4,000 yards, situated on the coast of Fife, near Leuchars, between the rivers Tay and Eden and extending seawards; the centre of the area being in Latitude 56° 25' N., longitude 2° 46' W., and about 5 miles N. of St. Andrews and 7 miles E.S.E. of Dundee.

**Programme of Firing.**—From April 1 to October 31.—Mondays, Tuesdays, Thursdays and Fridays from 0830 hours to 1800 hours.

From November 1 to March 31.—Mondays, Tuesdays, Thursdays and Fridays from 0930 hours to 1530 hours.

**Minimum Safety Height above Sea Level.**—8,000 ft.

**Warning Signals.**—Red flags.

(No. 52 of 1927.)

## R.A.F. Rifle Championship

The following were the scores in the R.A.F. Rifle Championship held at the Bisley meeting:—F O. S. Wallingford, Calshot, 314; Flight-Lt. W. E. Staton, Calshot, 311; Corp. Hulce, Cranwell, 300; Flight-Lt. Dark, Eastchurch, 293; Sgt.-Major B. Earl, Flowerdown, 291; L/Ac. McNair, Henlow, 290; Flight-Lt. Greenslade, Cranwell, 288; Wing-Commander S. Grant-Dalton, Eastchurch, 283. The R.A.F. Revolver Championship was won by Wing-Commander S. Grant-Dalton, Eastchurch.

## PUBLICATIONS RECEIVED

**Aeronautical Research Committee. Reports and Memoranda.** No. 1065 (Ae. 247). Preliminary Experiments on Two-Dimensional Flow Round Bodies Moving through a Stationary Fluid. By Prof. B. Melville Jones, M.A., A.F.C., W. S. Farren, M.B.E., and Flight-Lieut. C. E. W. Lockyer, R.A.F. November, 1926. H.M. Stationery Office, Kingsway, London, W.C.2. Price 1s. 6d. net.

**The Advertiser's A.B.C. 1927.** T. B. Browne, Ltd., 163, Queen Victoria Street, London, E.C.4. Price 21s. net.

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